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1917?



Descriptive Catalog and Price List



The Book of Truth for Planters of New Groves





Ocklawaha Nurseries

ESTABLISHED 1897

"No tree is a first-class tree unless budded from a bearing tree of a known quantity and quality of production."

—O. W. Conner.

**Budwood Selection for heavy bearing, regular crops,
and quality is applied to every tree we grow**

O. W. CONNER, Proprietor

H. R. WHITCOMB, Secretary

T. C. CALDWELL, Field Manager

J. F. VERIGAN, Cashier

Postoffice Address: Lake Gem, Fla.

Telegraph Address: Zellwood, Fla.

Our office has long distance Bell Telephone. For quick service call us through any long distance station in Florida; call Victoria

OCKLAWAH NURSERIES

1897-1917

TWENTY years ago Ocklawaha Nurseries were established with a view to supplying the planters of the South with citrus trees that represented the best to be produced at that time. The proprietor, O. W. Conner, has always given and will continue to give his personal attention to all vital matters connected with the business. Since the earliest days of the citrus industry, he has been studying and applying better methods of tree propagation and, as a result, guesswork and haphazard methods have been superseded by scientific methods, until to-day Ocklawaha planter the very highest insurance on the trees offered the market. To those who through their efforts have helped to make the nurseries the success they are today, our hearty thanks are extended. Our constant improvements have been made under the direction of Pedi-Trees, until today second to none.

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Our present location is in the great lake region, on a large tract of ideal land, with many of whom since our early days, and our 85 acres of bearing groves, where our experiments have never fail to impress visitors with the sincerity of our operations. The developments and improvements are delivered within two days from time trees are dug from nursery, insuring good condition of all shipments on arrival at destination. Most buyers in Orange, Lake, Seminole, and other nearby counties have good hard-surface roads to our very door, and they can always see before they buy our trees.

We extend a cordial invitation to the public to visit our nurseries and to those who are unfamiliar with our product, we wish to emphasize the points on which we expect to merit your patronage: To deliver trees of *proven character* as to name, type and productiveness—trees that you and we will be proud of in the years to come.

We believe that—

"No nursery tree is a first-class tree unless budded from a bearing tree of a known quantity and quality of production"—and all our work is done to prove this is true, by every Ocklawaha Nursery tree that is planted by our customers.

OCKLAWAHA NURSERIES

Pedigreed Trees--How They Are Grown

STANDARD VARIETIES. HOW ORIGINATED

It must be remembered that the first oranges produced in Florida were produced from the old seedling groves, from Jacksonville south to the Florida Keys; that here and there through this wide belt developed various trees



All Conner Prolific Grapefruit one, two and three-year buds as they come from the nursery. The soil is deep—thirty feet—and the roots are component parts of their value. Refer to this as a guide to what your trees ought to be. This is what they will be if you buy them from Ocklawaha Nurseries.

OCKLAWAHNA NURSERIES

of more than ordinary production as to quality, season of ripening, etc.; and as fruit-growing in Florida became a commercial proposition and wider areas of grove were planted, there have developed as specific types from these seedling trees such known varieties as Parson Brown, Homosassa, Pineapple, and dozens of others of local reputation as being better than the ordinary seedling fruit usually produced on seedling trees.



Conner Prolific Grapefruit
One-year-old sour orange stock. World beaters.

VARIATIONS ON TYPE OF FRUIT The fact that all of these varieties developed from one seedling strain certainly establishes another fact, and that is that any one type of fruit may vary to the extent of many distinct types, even on a single tree, and inasmuch as all these fixed types originated from the seedling, and as these variations do occur on the same tree, the fact is established that these variations carry with them always, mutations with the old seedling tree from which they originated.

HOW LACK OF BUD SELECTION HAS INJURED VARIETIES

Through many years of propagating these new types, hundreds of thousands of trees have been grown. The young nursery trees have been used from which to obtain budwood, and these new types have not been tested to determine if they were, or were not, true to the original type. Variations have occurred—thousands of them, and as the nurseryman has cut his budwood from his nursery, he has budded and rebudded the variations into each generation of trees grown, until little of the original strain remains, and off type and poor producers dominate the product of nurseries using such methods of propagation in their work. At the present time, under the influence of such a method of propagation, the planter of a Parson Brown, Pineapple, Homosassa, or other such standard type of fruit originating from the old seedling



OCKLAWAH NURSERIES

types, is altogether uncertain as to what his trees will produce when planted in his grove and brought into bearing. There is no doubt that the nurserymen who are propagating their trees in this way are sincere in their intention to produce a tree true to name; but they have not acquainted themselves with the fact that the variations above referred to occur with such rapidity as to destroy the good intentions and aims they have when they are safeguarding their variety in the nursery to keep it true to name. True to name is nothing unless a tree bears fruit true to the type the name indicates.

WHERE IMPROVEMENT BEGAN

In our own nursery work, commenced over twenty years ago, we found at the end of eight or ten years of propagation that we were bringing into bearing in our own groves trees propagated from the so-called true-to-name stock, budded either from nursery rows that had been kept absolutely pure as to variety, or from young trees planted in grove form from our nursery; that we were, in the Pineapple, Parson Brown and Tardiff oranges, which were standards in that day, producing only 50% or 60% of the trees planted true to one type of fruit, while the trees that did not bear the one type of fruit were almost alike, leaf by leaf, and twig by twig, in character of growth with the parent strain.

MUTATIONS— THEIR EFFECT

These off-type trees, without a question, came from the mutations of the old seedling type with the improved hybrid variety, and they are producing today in our budded groves oranges so absolutely like the seedlings from which they originated that when gathered from the tree the seedling fruit and the budded fruit could not be separated.

BUD SELECTION— WHY ?

Seeing this, we knew that something was radically wrong with our propagation work, and knowing so well that the varieties had been kept separate and true to name in the nursery, we decided that the variations were responsible, and in order to cut out the variations began to make selections from our bearing trees in our groves producing the best quality and the highest type of fruit. Several years ago these trees from the later selections came into bearing, with the result that practically 100% were not only true to name, but true to the type from which our bud selections had been made.

EXPERIMENTS WITH SPECIFIC TYPES

We then turned our attention to such other specific types as the Valencia Late orange and early grapefruit, with the idea of fixing in these types the same qualities that had been fixed in the Pineapple and Parson Brown oranges. By close inspection of fruiting trees we found that in one block of less than 200 Valencia oranges we had no less than five distinct types of fruit, consisting of large, round, coarse fruit; medium sized, oval, highly colored fruit; medium sized, pale, oblong fruit; small, round, pale colored fruit, all of the late season for which the Valencia is famous, but varying in size, shape and color; and two trees in the block with a season of ripening no later than the first of December; showing that time of ripening, as well as form and color, were affected by variation. These trees were absolutely true to name as far as that specification goes, but the same rule as to variation applied to them that applied to the varieties originating from the seedling orange.

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VALENCIA—ITS VARIATIONS

The Valencia without doubt is a hybrid of the seedling orange, occurring before its introduction into the United States, and many types have originated from the original strain during the time it has been propagated in the Florida and California nurseries from nursery stock. The mutation with the seedling type is frequently shown by the development of trees from unselected budwood into producers of fruit with an early ripening season. During the last eight years, selections of exceptional trees have been made from this stock, and fixed types have been established. Experiments have been carried on by means of budding and grafting from fruit stems of the most excellent types and quality of fruit until now we are in a position



Extra Sized, if you want them. In trees on lemon stock we lead in size, quality and root system, and we bud only what will succeed on this root. Here's a bunch of Conner Prolific Grapefruit.

to state that we can produce practically any type of Valencia Late that we choose by the selection of budwood from the fruit stem on their fruiting branches of the type we wish to establish.

THE U. S. GOV'T WORK WITH BUD SELECTION

During this time the United States government has been busy in California, doing work along the same line, and the results of the experiments carried out have shown the same remarkable success in establishing fixity of type in the standard varieties of fruit grown in California, among which is the Valencia Late. They have also been eminently successful in establishing one type of the Marsh Seedless grapefruit by working along the same line of bud selection from fruit stems that we used in our propagation of this variety six years ago, and by means of which over 1700 trees were brought into bearing, in our grounds, each and every tree of which showed absolute fixity of type of fruit produced, and if fruit were gathered from any one of a dozen trees, or a hundred, for that matter,



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and brought together, it would be absolutely impossible to separate one fruit from the other and call it a different type.

VALUE OF BUD SELECTION PROVEN BY TEST TREES

The value of bud selection as applied to the commercial grove is almost inestimable. We have trees planted in our bearing groves from ordinary methods of propagation, in check with trees from selective propagation work, both being of the same age and both in bearing, from which we have shipped the fruit, and these trees at six years old have shown a difference of over \$10.00 per tree in one year's production in favor of the pedigreed trees, and the difference in price obtained per box for the fruit is nothing short of remarkable when you take into consideration the fact that our pedigreed Pineapple oranges have brought \$4.20 a box, while the ordinary propagation referred to in the first of this article has been incapable of bringing a higher price than \$2.35 per box, both being sold the same day, in the same market, at auction, to the same buyers.

HOW BUD SELECTION AFFECTS FRUIT VALUE

Today, when we sell you a Pineapple or a Valencia Late orange tree, and you plant it, cultivate, fertilize and spray it correctly, you may depend upon getting, in the Pineapple orange, an orange of high color, slightly oblong in shape, heavy bearing, ripening in January to its high, reddish color and full aroma, and to pack practically all first and second grades of fruit, with very few culls and very few third grades. In Valencias, you will obtain, from trees planted on sour orange stock, a fruit slightly oval in shape, medium in size, of good color, bright, and with a ripening season from the middle of March to the first of April, and which will remain on your trees in good condition until the last of May. On lemon stock the fruit will be slightly larger, practically of the same shape but a lighter color, and will remain on the trees in good condition during the first six or eight years until the last of April, and as the trees grow older, until as late in the season as the last of May. Because of the vegetative habit of the rough lemon stock it is not possible to keep late varieties on the trees so long as it is possible to keep in good condition late varieties on the sour orange stock.

BUD SELECTION STANDARDIZES FRUIT QUALITY

We consider that bud selection will be responsible for standardizing a fixed type of the standard varieties of Florida production, and that as the years go by and planters realize more and more the value of bud selection applied to their trees they will come to the point of demanding absolutely nothing else but pedigreed trees for all planting they do; and the sooner they realize the necessity of bud selection the better it will be for their pocketbook, and lessen the number of trees that will finally have to be worked over in order to meet the requirements of the man who is growing fruit for market purposes. Please remember that it is possible to produce from any method of propagation a tree that has a good caliper, a splendid root system and a vigorous, healthy top. Any good, merchantable tree will have all these attributes. *But it is only by budding the proper strain into your trees* by the nurseryman that you will be able to make of all trees planted, profitable, heavy producers of first-quality fruit. The sooner you demand the right kind of propagation the sooner the nurseries will be forced to take up that kind of work.

AN UNUSUAL ADVANTAGE

The Ocklawaha Nurseries are in a position to permit you to make a choice of the bearing trees in their groves, from which your trees may be budded, and as well, to permit you to make actual fruit selections from their bearing trees in the proper season



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for making such selections of fruit specimens, the stems of which are to be used in propagating the trees required for your planting, and to furnish you a history of that particular tree. In our own propagation work for you we are selecting by fruit specimens all specific standard types of fruit, such as Pineapple, Valencia and Parson Brown oranges, and Conner Prolific, Improved Conner Prolific and Marsh Seedless grapefruit; and where we fail to get all buds of this propagation to live, we are rebudding our stock from trees brought into bearing, and six or seven years old, from fruit stem propagations in our groves. Every budwood tree is marked after having been thoroughly tested and proven to be a good producer of the proper quality or type of fruit. During the past two or three years we have had the very highest testimonials as to the quality of the product obtained from Ocklawaha Nurseries propagations during the past nineteen years. It is nothing unusual for our customers to tell us that they have the finest Valencia Late, Pineapple, or early grapefruit grove in their entire section, and that their product is not only the largest in yield but the finest in quality. Ocklawaha Nurseries trees produced one of the oldest groves in Dade County, and within the last two weeks we have been informed that this is the finest grove and the best producer of the best grade of fruit in the entire neighborhood in which it is planted. The trees for this grove, and many other groves of which we have made mention above, were founded on budwood selected from bearing trees alone; and we can well enough imagine the higher degree of satisfaction that our trees will give from our present propagations from selected budwood from even finer trees than those used to propagate the trees that were planted many years ago, and of which we are having such fine reports.

IMPROPER BUD SELECTION. ITS EFFECT Quite unlike the above is the knowledge that comes to us from time to time of groves planted from inferior methods of propagation; namely, from young, untested trees, or from nursery stock.

A WHOLE NURSERY OF POOR TREES In the case of one grower we learn that as many as 5000 Pineapple orange trees were planted by himself and his neighbors, all of which were obtained from one nursery, and not one of which produced the genuine Pineapple orange as produced in Ocklawaha Nurseries grove. The fruit from that grove sold at around \$1.00 per box, while the fruit from our pedigree grove brought in the same season over \$4.00. If that grower had planted Ocklawaha Nurseries pedigree trees at the time he planted the cheaper trees obtained from another source, the income from those trees in that one year would have paid for the trees and the expense of bringing them to the producing stage three or four times over.

HOW THE PUBLIC VIEWS OUR WORK We have given demonstrations to over two thousand people in our groves during the last three years, and we have never never yet had a man in our groves for one of these demonstrations who has not left it fully enthused and fully convinced as to the value of bud selection applied to the nursery trees. This enthusiasm and conviction grows as our trees are planted and come into bearing and the grower feels always that he can plant a bud-selected, pedigree Ocklawaha Nursery tree and cultivate it and spend money on it to bring it into bearing, with the full conviction that when his tree comes into bearing he will have a tree of exceptional value, which is well worth the money, time and care spent to bring it into the profitable production that is sure to follow its planting and subsequent care.

Our Trees in Louisiana

Louisiana planters have by all means the richest orange and grapefruit land in the United States. They have besides a never ending supply of moisture. They have in New Orleans, Mobile, Memphis, Atlanta, Birmingham and other nearby cities the closest and the quickest location to reach market of any body of orange growers in the United States. Besides all these advantages they also have a land so adapted to quick maturity and color of fruit that they may, if they plant true strains of the *Car-* and Conner Seed- both of which are liest to ripen and the markets the well colored fruit which if properly ed "Parson Brown" Seedless," and by for quality, and rate, realize the any growers in the

Louisiana also gerines, and the grapefruit. The classed as second ness, quality and when Conner Pro- Lonisiana, it pro- grapefruit grown

Louisiana all means go in because these will always reach maturity at a time that they can be marketed before danger of cold injury, and often that may mean either profit or loss to the grower. Yet each grower in justice to himself should plant a portion of his ground to



A. Commander's Josephine Grove
Main orchard looking west
Trees are in bloom

ney Parson Brown less' Early Orange, early and the ear- color, place upon first good, sweet, of the season, packed and brand- or "Early Conner grading altogether each quality sepa- best net returns of United States.

produces fine tan- finest kind of latter may be to none in bright- flavor. Besides, lific is planted in duces the earliest in the United States.

planters should by for early varieties,



Main orchard looking west



Main orchard looking east

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Pineapple and Valencia Late oranges, as both these varieties produce perfect fruit, and while it matures and ripens later than other varieties mentioned it may be relied upon to give a good return to the grower, for at that time its only competitor will be the inferior grades of Florida, which Florida always markets in Southern markets, sending her better grades East, North and West, to compete with the fine fruit from California.

With the ideal conditions in your favor why not plant a grove in Southern Louisiana?

We first became acquainted with Louisiana fruit growing in 1899, and at that time little was known of the Sour Orange Stock.

The growers had relied upon the Louisiana Sweet Seedling, or had been inveigled into planting budded trees on citrus trifoliata stock. Neither did Louisiana planters know much about the Parson Brown, or other early varieties of oranges. Thanks, however, to the knowledge of his business, the wonderful nerve, and foresight of our good friend, Mr. Tony Commander, of 324 Magazine street, New Orleans, whom now every grower along the river knows and likes, the sour orange stock has become well established, and known as *the best stock to be had for Louisiana groves.*

The first grove on sour orange stock, planted down the river, was on Tony Commander's Josephine grove, at Boothville, from The Ocklawaha Nurseries. This was in March, 1899. Its growth was rapid, and the next year those trees were the wonder of the whole country. The Josephine Grove has proven to be the most prolific and productive of the best fruit of any grove in Southern Louisiana. To-day, *no one could possibly persuade him to plant a tree on any but sour orange stock, nor could he be induced to plant any but Ocklawaha Nurseries Trees; and he adds new acres to his grove every year.*

We have prevailed upon Mr. Commander to handle Ocklawaha Nursery trees in connection with the management of his groves "down the river," and his success with our trees, his knowledge of stocks, varieties, and his honesty with his friends, will recommend him for a full share of your business. Let him tell you about us. He has been all over our big plant, knows our facilities, and knows from planting our *Pedigreed Trees* of quality, what their importance to the planter's success means. Write or call on him at 324 Magazine St., New Orleans, La.

1700 RECORD MAKERS—A WHOLE GROVE OF SUCCESSFUL TREES

Mr. O. W. Conner, Lake Gem, Fla.

Orlando, Florida, Aug. 17, 1917.

Dear Sir: When I was ready to plant my 25 acres of land to citrus trees the only fear I had as to the success of the venture was could I be sure of prolific trees and true to name. From investigating the different nurseries, I read your quotation "No nursery tree is a first-class tree unless budded from a bearing tree of a known quantity and quality of production." From this I made my decision to place an order of 1700 trees with the Ocklawaha Nurseries.

Now, at the end of the third season, I am pleased to say to you, Mr. Conner, that every one of the 1700 trees are true to name, namely: Pineapple orange trees and Prolific grapefruit, and as to their bearing qualities, cannot be beat. I write this to you to show my appreciation of your efforts to build up the citrus industry of this State by budding nursery stock from bearing trees of known quantity and quality of production.

Wishing you success in your business, I am

Yours very truly,

H. E. BLAIR.

30 YEARS OF PLANTING—AND OCKLAWAHA NURSERIES TREES THE BEST

Mr. O. W. Conner, Lake Gem, Fla.

Plymouth, Fla., Jan. 14, 1914.

Dear Sir: Please find enclosed check for the last lot of nursery trees. I must say they were the best lot of trees I ever set, and you know I have been here a long time and have set a great many groves.

Yours truly,

JNO. C. MERRILL.

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A Word for Your Own Good

The prospective grove planter has many difficult problems (for him) to consider. The choice of land, location, clearing, plowing, fencing, buying trees, the variety adapted, and how to care for the grove generally—all loom up before him as a really formidable array. In this book we have prepared valuable data on all these subjects, and many others, all of which will give valuable information.

As these matters are treated from a standpoint of knowledge gained by 30 years active experience, based on hard work and enterprise, and as the result of the application of all the suggestions hereafter presented has been to build some of Florida's best citrus properties, we know they will be valuable to the beginner.

By following our advice you will be able to choose the variety and root stock that will, on your particular soil, build for you a profitable, fruitful, healthy grove, producing fruit that will bring you a large return on your investment.

Thirty years ago—or even ten years ago—grove planters could not enjoy this advantage, because many problems still were unsolved, but today the beginner can start with the benefit of the 30 years' experience that will eliminate the greater part of mischance from his undertaking and thus insure his full success.

Follow the subject of "soils" closely, because it applies to all Florida and that of "root stocks," because it is most important, wherever you plant your grove. "Choice of variety to suit your requirement," is also treated here, as well as the cost of building your grove, how to sell your fruit, and the profit gained, as well as the general care, culture and spraying of the trees. Thus the whole matter of building a first-class grove becomes one of simplicity, instead of a complex one, and need not be one of mystery and doubtful success.



"The Old Seedling Type will soon be a thing of the past." One of the results of planting the wrong stock

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Soils

Diversity in soils over comparatively small areas is the rule in the Florida citrus belt, and often a tract of only forty acres will contain high pine or mixed pine and oak, flatwoods, or pine and palmetto, high hammock (hardwood and palmetto), or heavy hammock land. A proper division of the soil is essential in order to plant the proper root stock, and the variety of fruit that will produce the best grades of fruit of the highest commercial value.

Generally, throughout the high pine land region of Lake, Orange, Polk, Pinellas and DeSoto Counties, the soil is high, sandy, and covered with pine and willow oak, or blackjack oak growth, and is without clay subsoil; and where such soils are found then the lemon stock should be used, and the variety best adapted to your stock for that region. However, all over these counties are to be found large areas of heavier soils, timbered with large, tall pines, mixed with willow oak; and these soils, as a rule, lie on lower levels than the high ridges described above. They are of finer grain or texture, have a thicker covering of the gray surface soil, are always underlaid with a fine yellow subsoil, and generally at from three to ten or twelve feet are underlaid with a clay subsoil, which conditions, taken altogether, make the ideal soil for planting any and all varieties of citrus fruits on sour orange stock.

FLATWOODS In addition to the soils named above, and within the same counties, will be found also large areas of flatwoods lands, rich and heavy in character, underlaid with a very fine grain chocolate subsoil, and in some cases with hardpan at a depth of two or three feet, on which the growth is generally heavy, thick with pine, palmetto, and a heavy crop of wire-grass; and such soils as these have an elevation of anywhere from four or five to ten or twelve feet above the water level. Where the surface of the ground has



Two-year Conner Prolific Grapefruit Buds
Planted six months; high pine land; no clay subsoil



Conner Prolific Grapefruit

Two years old from two-year buds. Just coming into bearing. Planted on high sandy pine land.
Budded on Lemon Stock

patches here and there of dwarf myrtle bushes, or dwarf runner oaks, soils like this are generally the most fertile of any of the pine or flatwoods class, but generally colder.

On such soils as these the sour orange stock should be used exclusively, unless an occasional planting of Prolific or Marsh Seedless grapefruit is made on grapefruit stock. Soils like these are also generally better adapted to the production of Pineapple, Parson Brown and Tangerine oranges, and early varieties of grapefruit, and are not so well adapted to the production of the later types of fruit.

HAMMOCK OR HARDWOOD SOILS

There are also small areas in the above named counties of heavy hammock or hardwood soils, which may or may not be underlaid with clay or marl; but where clay or marl does underlie these soils it is generally at a depth of two or three feet below the surface, and where such subsoils exist the elevation above water level is generally not over seven or eight feet.

These heavy hammock areas may be considered as among the very best for the production of early grapefruit and Pineapple oranges, because the subsoil is never without its supply of moisture and is constantly giving up lime-bearing solutions that keep sweet and fertile the surface covering of the soil and hasten the development of the fruit produced, giving the very best of color and the very best of peel texture and the earliest season of ripening of any soil among those described above.

Our first recommendation for planting any such land as that described as hammock lands would be the extra early Improved Conner Prolific Grapefruit, as this variety of grapefruit will, on such soil, ripen its fruit and have it ready for the market before the 15th of October every year, and generally the 15th to 20th of September, and at such a time grapefruit is always worth a higher price than will obtain for it through any part of the shipping season for Florida grapefruit. Any good, well-matured and well-colored fruit will, at this season, be worth from \$4 to \$7 per box in the markets of the country; while later on in the season, such midseason types as Walters, Duncan, Pernambuco, and other standard sorts, will be sold at approximately half this price.

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HAMMOCK (Sandy Type) Among the hammock soils found in this region are also the high, sandy type, whose growth is live-oak, hickory, ash, cabbage palmetto, water oak, etc., and which are not underlaid with clay, and which generally lie in rolling form and around the clear water lakes; whose surface soil is light gray in color, and whose subsoil may be either gray, yellow, red or snuff colored. The darker the surface of the soil the better the land is, as a rule, while those showing the light gray subsoil all the way down should be avoided for grove planting.

The type of fruit generally best adapted for these high hammock lands is the Valencia orange and Marsh Seedless grapefruit, as development of fruit and ripening season will be later on such soils than generally obtain on any other soils except the high, ridge pine lands. Without any question sour orange stock should be used on all hammock lands of any description whatsoever, as this stock will give the best results in producing fruit of a high finish and in keeping the tops of your trees in a healthier and more vigorous condition than will the lemon, grapefruit or any other stock you may use.

EAST COAST SOILS Soils along the East Coast of Florida, from Titusville south to Little River, are generally on a par with those of the West Coast, except that in that portion from Titusville to West Palm Beach, along the East Coast, is to be found a belt of high hickory ridge, mixed with cabbage palm, medium-sized water oaks, palmettos, and growth of a like nature; which is different from anything found elsewhere in the state. The surface of the soil is generally white to very light gray in color, and the subsoil is from reddish to chocolate color, and is all of a sandy composition. Lemon stock has been planted in many places in soil like this, and has not been found successful, except for grapefruit on the higher areas. Neither has the lemon stock been found to be extremely healthy on this soil, nor long-lived, because, as a general thing, the roots do not penetrate deeply into the subsoil, which is the part of this soil that is of greater value to the citrus fruit grower. And while the sour



Conner Prolific Grapefruit

Two-year buds, planted exactly three years. Twelve feet high, ten feet across. Crop four to seven boxes per tree

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stock requires a longer time to get started off vigorously, it is, during that time, sending its roots down into the richer subsoil and anchoring itself more firmly, so that in the years to come it will produce heavier crops and better fruit, and there is practically no limit to its profitable production after it once has its roots firmly fixed in the soil. Our advice would be to cling tenaciously to the sour orange stock for these ridge lands, especially along the Indian River, and unless you are situated on the second or third ridge back, where the slope is long and where the subsoil is lighter in color, where the lemon stock may be planted to better advantage, provided, of course, such varieties as grapefruit and Pineapple oranges are used.



Conner Prolific Grapefruit. Five years old. Seven to twelve boxes per tree

The heavy hammock soils in the vicinity of Titusville, Cocoa, Rockledge, and other points south to Miami, are generally only slightly elevated above water level. Some of these are underlaid with coquina rock, but most of them are underlaid with marl, and in some places limestone. The limestone is generally, however, of boulder form, and is not to be found in the hammocks generally except in those portions where the soil has recently been drained by the various land companies operating in that section.

Wherever marl underlies these soils it is at once a benefit, because sweet soil is the rule wherever marl is found. Wherever solid beds of lime rock or other materials are found under the surface at from two to four or five feet deep, these may be considered an obstacle to planting only until dynamiting is resorted to to open up the way for the roots to penetrate deeply.

In considering the above point, you may take it for granted that the roots of



Pineapple Oranges on sour orange stock. Planted two years on pine land

your orange or grapefruit trees will never penetrate deeper in the ground than the water level. Neither will fertility obtain to a deeper point, because the first act of standing water in your soil is to sterilize it as far as any plant benefit is concerned.

Flatwoods, or mixed pine and palmetto lands, also obtain in large areas along both the east and west coasts. In certain large areas these soils are underlaid with hardpan, marl, and clay or shell. The best adapted lands in this class are the lands underlaid with marl and shell, but the hardpan lands may be made available for citrus fruit culture by properly dynamiting each tree hole before the tree is planted, and providing proper drainage in every case, so that the soil will respond readily to cultivation and sweeten up under the influence of such cover crops as may be planted for that purpose.

Treatment with hydrated lime or crushed limestone is always beneficial to hardpan lands, and from 1200 lbs. of hydrated lime to 2000 lbs. of crushed lime rock is always beneficial to such soils when plowed in thoroughly to a depth of from six to eight inches, as this lime application will neutralize the tannic acid contained in palmetto and other root growths and convert into calcium nitrate and other plantfoods the organic materials in such soils.

We do not generally consider hardpan lands suitable for planting until this application of lime has been made and a heavy cover crop of cowpeas, beggarweed or velvet beans has been produced. If your land is not sweet enough to produce a cover crop, neither is it sweet enough to produce a healthy orange tree, and let this be your guide in planting such soils.

PRAIRIE SOILS Such soils may be generally described as lying within areas of recent drainage work, carried out along the east and west coasts of Florida, and at varying distances from three or four to from eight to ten miles inland, and which have been drained at a depth of from $2\frac{1}{2}$ to 5 or 6 feet below the surface. These lands vary from: First, a white, sandy surface soil, terminating in a white shell subsoil almost bare of any covering, but generally covered with a short, grassy growth, to, second, soils covered with 1 to 2 inches of light fluffy muck composition, underlaid with from 6 or 8 to 12 or 14 inches of clear sand, this in turn underlaid with shell, or, third, with a surface soil of from 6 to 12 inches of loam, underlaid with red or blue clay, which in turn is underlaid with marl. The first named is rather doubtful as to its adaptability to citrus fruit growing. Some plantings of citrus trees, made two or three years

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ago, on such land have shown fair progress, while other plantings have shown almost absolute failure.

On lands of the second description it is practically certain that failure will follow the planting of citrus on such soils, as the sand underlying the light muck strata is absolutely sterile and cannot, to any practical extent, be mixed with the subsoil, and until this is done it will be impossible to develop a citrus fruit tree on such lands.

The prairie lands last described, however, will be found to be extremely fertile and rich and of such a composition as to make a citrus fruit tree grow luxuriantly and produce heavy crops of good fruit, provided they are cultivated in such a way as to suit the requirements of the tree.



Pineapple Orange Grove, six years old. High pine land

In the first place, such soils should be mounded up to a height of at least 16 to 18 inches above the general surface, which mounding up can be accomplished by plowing the land several times toward the point the tree is to occupy. When this is accomplished the tree should be planted on top of the ridge and light cultivation only should be resorted to thereafter, as trees on rich land like this must send out their root system close to the surface, and if this development of root system is interfered with dieback will result.

Applications of limestone or hydrated lime should be made to such soils only when found to contain excessive acid, and the planter is cautioned to always make a litmus test of his soil before planting time to determine this point. By carefully cultivating as above described, and planting on such land a tree of moderate size, no larger than the standard 4-5 foot, 1-year-old bud on 4-year-old sour orange stock, an extremely healthy, thrifty grove will be developed that will produce large quantities of fruit at a lower cost than on many other soils along the coast of Florida, either east or west. Muck lands should generally be avoided, as they are seldom, if ever, adapted to successful culture of citrus fruits of any kind.

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Root Stocks

In the foregoing pages we have tried to comprehensively explain to you the different qualities of soils obtaining in Florida, and wherever citrus fruits are grown, whether in Florida or elsewhere, practically the same rule of the distribution of root stock will apply, and with very little variation as to varieties. By re-viewing this treatise on soils you will find that we have specified the sour orange stock for all soils whose water table is from $2\frac{1}{2}$ to 8 or 10 feet below the surface in hammock, flatwoods and prairie lands, and for all heavy classes of pine lands where the timber is heavy and elevation is moderately low or high, and where water oak, or willow oak, or other forms of oak growth, are mixed with the pine on the soil. For some classes of soils, such as moderately high or low levels, where the surface and subsoil are both rich, we have advocated the moderate use of grapefruit stock budded to grapefruit varieties. We have specified sour orange stock for all classes of hammock lands, including the hickory ridge lands described as lying along the East Coast. For the high sandy lands of the various counties named we have specified the rough lemon stock.

THE SOUR ORANGE STOCK FOR RICH LANDS MAKES FINE FRUIT

We prefer for the sake of the quality of the fruit produced that on all lands suitable to sour orange stock such stock be used; and while this stock may be a little slower in getting off it is employing the time well, because it is devoting that time to sending its roots down deeper into the soil and penetrating its richest treasures, which will, as time goes on, be brought up and stored in the tree, to be used for the production of heavy crops of fruit of a fine quality.

It would, however, be foolish to prescribe the sour orange stock as the one and only stock to use for all plantings of citrus groves in the state, because there are soils on which the lemon stock would be so much better to use because of the possibility of getting a greater thrift and vigor and the production of good crops of fruit where it would be almost impossible to cultivate the sour orange because of its lack of adaptability to such soils.

There must be exercised good judgment in placing lemon and sour orange stock on their respective soils, and we prescribe as a general rule the selection of the rough lemon stock for the high ridge lands, which may or may not be underlaid with clay, and all other lands as described above for the sour orange or grapefruit stock.

THE LEMON STOCK FOR HIGH LIGHT SOILS SUCCEEDS BEST

The high ridge lands, as a general thing, are deficient in humus and moisture, and the lemon stock is capable of overcoming these soil difficulties to a large degree, while the sour orange stock is not. On these lighter grades of soil, it is necessary to fertilize perhaps a little more heavily, and as the lemon stock is largely a surface feeder, (feeding seldom at a depth greater than 10 to 12 inches below the surface), it will readily pick up not only the commercial fertilizer spread to secure growth of the trees, but will, as well, readily assimilate the organic materials given by nature's agencies through the cover crops grown on the soil and convert them into vigorous growth and prolificness.

The habit of growth of the lemon stock must not be left out of your consideration, and where the influence of that habit is against your interest avoid it by making a proper choice of varieties. Over many years of experience we have

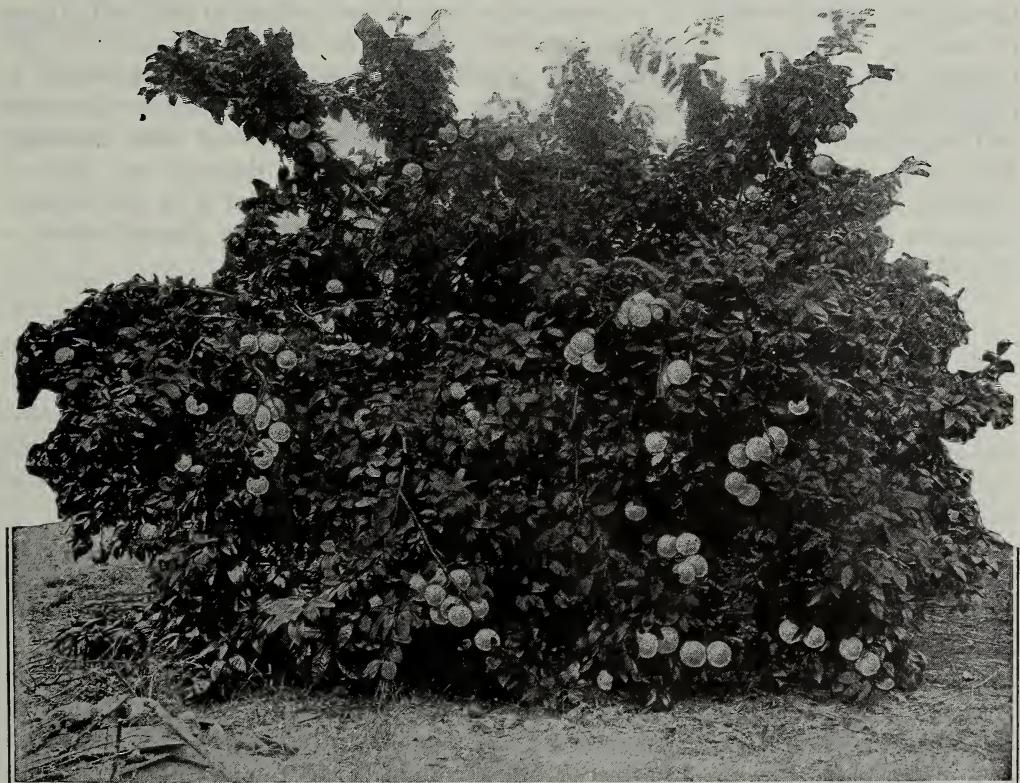
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found the lemon stock capable of producing extremely fine grades of early grapefruit, Valencia Late, Pineapple oranges, and Tangerines. It is also a successful stock on which to propagate limes and a better success can generally be derived from limes budded on the lemon stock than by any other means of propagation.

SENSIBLE PLANTING The trees on lemon stock should not be planted too far apart. We have had better success and produced better fruit by planting grapefruit, Pineapple and Valencia Late oranges at the rate of 80 to 100 trees to the acre than by any other method of planting; the reason for this being that the root system of these trees, after inhabiting or incorporating the soil, acts as a check to luxuriant growth and forces heavy bloom and consequently heavy fruiting. It is better to have a medium sized, heavy fruiting tree than to have a big, sappy, fast-growing tree, bearing light crops of coarse, woody fruit.

As the life of a tree budded on rough lemon stock may be calculated as comparatively shorter than those on sour stock, it will be more profitable to plant them closer together and obtain a heavier output than to plant farther apart and produce big trees, with a lighter crop of fruit from the same amount of fertilizer and cultivation necessary to apply if the trees were planted close together.

USE CARE IN SELECTING YOUR ROOT STOCK The writer has come in contact with a great many growers in various parts of the state, who have been advised to use rough lemon stock on soils of the flatwoods type, whose water level was not over two or three feet below the surface, and who, acting upon the advice of nurserymen who were



Conner Prolific Grapefruit—seven years old



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circularizing the state with this advice, were about to place their orders for trees on rough lemon stock for such planting. Such advice as this may be safely considered as misleading and put out for the express purpose of securing business, and no other, and if followed would certainly be suicidal as far as the future success of the grove is concerned. We have also come in contact with growers who had been advised to use sour orange stock on some of the lightest, whitest, sandiest land in Florida. And the grower is constantly having advice of this kind placed before him by unscrupulous concerns who are probably interested only in the grower to the extent of the amount of money they can get from him for trees. The grower should be extremely careful in taking advice of this kind until its value can be substantiated by some responsible person of experience, as it is absolutely necessary and essential to have the proper root stock for your soil in order to obtain anything like full success when planting a citrus grove.

If you are in doubt, write us fully all about your soils, and send photographs of surrounding timber, or the timber on your own tract. Always give elevation, and describe growth, subsoil, surface soil, etc. Usually we can refer you for advice to a responsible party near you, or send some one to go over your problems with you to decide what stock and variety will best suit your soil.

CITRUS TRIFOLIATA STOCK

This root stock is valuable for planting on soils that are heavy and rich and inclined to excessive moisture without being acid or mucky in their nature. It is extremely hardy and can stand

a temperature of 8 or 10 degrees above zero when dormant through the winter season. It is valuable as a stock upon which to bud early types of oranges, grapefruit and kumquats for planting on rich, heavy soils in the northern fruit belts of Florida, also in Alabama, Mississippi and Louisiana. It is not suitable for planting in the delta lands of southern Texas, because of certain soil organisms in that region that destroy it almost immediately after planting. This stock is not adapted in any way for grove planting through any part of southern Florida, nor on any light, sandy soils anywhere. But it is particularly desirable for Satsuma oranges and Kumquats, which are to be planted where a tree of small size is desired.

What Does It Cost to Produce a Grove?

This question has been put to us by hundreds of prospective grove planters, and is an important one, because no one should be blind to the facts as to the sum required for an investment, the extent of which must depend upon the amount of money that one has to apply in that way.

The first cost comes, of course, in the purchase of the land; and this may be accomplished in various parts of the state at prices varying from \$25.00 to as high as \$200.00 per acre, according to location, quality of soil, etc., but generally to location.

The next item of expense is clearing the land, which costs from \$25.00 per acre for the medium to good grades of pine land in the hill regions of Florida, to from \$75.00 to \$125.00 per acre for the medium to heavy timbered hammock and mixed oak lands in the same or other regions. Flatwoods land, where palmettoes are on the ground, costs from \$40.00 to \$75.00 per acre to clear, while

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prairie lands cost practically nothing to prepare for the plow outside of ditches necessary to carry off an excessive amount of rainfall. Apply this clearing expense to the type of land you expect to plant and the first cost of the land in the locality where you will plant your grove. All items of culture, fertilizer, spraying, etc., applied after the land has been purchased and cleared, will generally be uniform in the various sections in which groves are planted, and will consist of the following:

Plowing and harrowing thoroughly.....	\$ 5.00 to \$ 7.00 per acre
Fencing, in 10-acre tracts, not over.....	10.00 to 15.00 per acre
(Less in tracts of larger size.)	

Trees, 70 to the acre, 50c to \$1.50 each..... 35.00 to 105.00 per acre

Plant no less than 70 trees to the acre, which will cost you as above, according to the grade of trees you select. If you decide upon a medium sized, one-year bud, grown in the Ocklawaha Nurseries way, you may depend upon that tree giving you absolutely satisfactory results, although requiring perhaps one to two years longer to bring it into bearing as compared with the larger grades of two-year buds.

The cost of cultivation after the tree is planted may be safely estimated as follows:

First year	\$25.00 to \$30.00 per acre
Second year	30.00 to 35.00 per acre
Third year	35.00 to 40.00 per acre

After the third year your grove will commence to bear.

Taking all the above into consideration, the usual sum necessary to finance a grove to its successful bearing state is from \$350.00 to \$450.00 per acre, which sum varies with the first cost of the land and the expense of clearing.

Quality of Fruit

Quality of fruit produced is always to be considered as the *first aim* of the grower. Quality is obtained, *first*, by budding it into the tree you plant from a proven source of bud selection, and tree-breeding counts *first* as an aid to the production of first-class fruit. You might as well expect to get a good producer of milk that would yield a large percent of butter-fat from a scrub cow that cost you \$20.00 as to expect to get a good yield of fruit that would grade high in first grade fruit from a tree to which bud selection has not been applied, and which you can buy at practically your own price.

BREEDING BUDWOOD TREES A NECESSITY The high grade Jersey has her value of \$100.00 up because she is well bred from pedigreed stock, by painstaking care to get a good producer. And it costs more to so breed than it does to turn a scrub cow loose in the woods to mate with the first bull that happens along. And the same thing is true of your nursery tree, as it certainly costs more to select buds and breed up to a *known standard* the parent trees from which nursery stock is grown than it does to merely go into a bearing grove and cut any bud that is true to name, or to cut budwood from a nursery tree, neither of which are proven producers over several years of observation to prove their value.

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Every tree of a standard variety from which buds are taken for Ocklawaha Nurseries trees has been tested for regular crops of best quality of fruit before being cut for budwood; and we have found in our experimental work that we can get uniform quality by budding from uniform fruit specimens of *one* ripening season—hence standard varieties have been improved in our work by budding chiefly from the stem of the fruit alone, and all rebudding is accomplished by budding from bearing trees budded by this method. Over 40,000 oranges and 28,000 grapefruit were removed from our trees with budwood attached this season just for the purpose of budding quality and uniformity into our trees.

KEEP YOUR TREES HEALTHY

Quality can also be aided by properly cultivating and spraying your trees; also by planting the proper root stock and the variety adapted to your soil, stock and local conditions.

Scab, rust mite, red spider, purple scale, whitefly, and other insects will infest your groves, and spraying is advisable always from the very first growth your trees put on. Lime-sulphur solution is the best to use against red spider, rust mite, thrips and scab, and should be applied while the growth is young, before leaves reach maturity, on all growth coming out after February first. Oil emulsions are best for whitefly, scale and other sucking insects, and should be used from May to November as required.

But remember, Ocklawaha Nurseries propagation work in producing your trees will be found to mean more in favor of the production of good, high grade fruit than any other item. And by comparison you will find it to be a mistake to use any other than Ocklawaha Nurseries trees.



One-year buds Conner Seedless Orange



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What Will the Grove Pay?

If you plant Ocklawaha Nurseries trees, budded as they are from the finest parent stock possible to obtain and already tested to full success in fruitage, then it is not very problematical as to what your grove will pay. Pedigreed trees will certainly prove to be the most profitable of any planted. We have found this to be absolutely true under all the test work that we have accomplished; and Ocklawaha Nurseries Pedigreed trees, planted side by side with trees grown by other methods of propagation, have proven themselves capable of producing three or four times the income that trees as ordinarily propagated have produced, and these results have been obtained from exactly the same method of fertilizing, spraying and culture.

RESULTS OF PLANTING PEDIGREED TREES

A one-year-old bud, planted four years, is at the stage generally spoken of as "coming into bearing," and when the tree is six or seven years old it is always in the profitable stage. In our groves of Pineapple and Valencia oranges, which of course have been under proper methods of care, we have procured at six years an average of $5\frac{1}{2}$ boxes of fruit to the tree, which was sold at a price that gave us from \$2.50 to \$2.75 per box on the tree after deducting cost of picking and packing. The cost of grove culture for that year amounted to \$80.00 per acre in these young groves, including cost of all fertilizer, spraying and spraying materials, labor, cultivation and general grove expense account. This was an actual cost of production on fruit on six-year-old trees of $18\frac{1}{2}$ c per box, which gave us a yield per acre in dollars and cents of \$908.60 to \$1,128.60 from pedigree trees, or a sum equal to three times the cost of producing this grove to the age of just coming into full bearing. This is considerably more than is usually produced from bearing trees in Florida, chiefly because of the fact that proper methods of bud selection have not been practiced to give each and every tree its full share of fruit.

Since the above record of production was made in our young groves, these trees have increased their bearing capacity until at seven years old they have shown an earning power of more than \$1,000.00 per acre over the earning power of trees budded in the ordinary way and planted side by side with them and under exactly the same methods of cultivation, spraying, etc.; so take heed now and when you plant your grove get nothing but pedigreed trees as a basis from which the grove may be built to the highest producing power.

WHY GROVES DO NOT PAY

Professor Shamel, in California, has found in applying tree record of production over a period of three or four years that only from 10% to 20% of the trees in those groves tested were producing a profit, while the balance of the trees in such groves were not yielding an income sufficient to keep them up. The result of having trees of this kind in your grove means of course that the earning power of the grove is decreased in accordance with the number of trees of low-producing power that the grove may contain, and as the higher-producing trees increase in number in the grove so does its earning power increase.

HIGH PRICES. HOW OBTAINED

In our grapefruit we have found the same comparative results to obtain, and the increase in value of our grapefruit trees has been found to be almost entirely due to the fact that Conner Prolific grapefruit has been planted, which has given a



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yield even greater than we ourselves expected to obtain under best methods of bud selection, and furthermore, has given us fruit for shipment at a time when grapefruit was selling at the very highest prices obtained through the season in which our shipments were made. It certainly means something to the grove owner to have something to sell at a time when the market demands it at the highest price, and this we have certainly found to apply to our grapefruit shipments. The highest prices that may ever be obtained for grapefruit are always when that article is scarcest in the markets of the country and there is very little green fruit of either deciduous or citrus to compete with it. This period of high market values obtains usually through the middle to the latter part of October and usually to the 15th to 20th of November, at which time Prolific grapefruit on fairly well matured trees is always ready to go to market. It is nothing unusual for a box or even a carload of grapefruit, of the proper color, and, above all, of the proper maturity as to juice content, to sell in the open markets of the United States at prices ranging from \$4.00 to \$6.00 or \$7.00 per box, and these prices will yield the grower from \$2.50 to over \$5.00 per box on the tree for his product. It cannot possibly cost you over 50c a box to produce a box of grapefruit, and the usual expense is around one-third of this sum. A grapefruit grove will cost you for maintenance from \$75.00 to \$125.00 per acre after the trees are in full bearing. The grapefruit is a heavy bearer, and produces a large number of boxes, and where the Conner Prolific variety is planted the greater proportion of the fruit is of the very highest grade.

EARLY FRUIT SELLS HIGH Earliness of season is by all means the chief factor of profit in producing grapefruit, and the Florida Citrus Exchange, as well as other shippers of Florida fruits, have found that they can obtain a considerably higher average of prices for all grapefruit shipped during the months of September, October and November than for any other period during their selling season of grapefruit.

LOSSES AVOIDED BY TIME OF SHIPMENT Another thing to take into consideration is the fact that when you ship your grapefruit early in the season you ship it without culls and without any loss by dropping from the trees. The trees are also relieved of their crop before they are injured by carrying the crop, and bear heavily again the next season. Grapefruit shipped through the middle of the season will certainly lose 15% to 20% by means above referred to; and grapefruit shipped late in the season, or from the first of March to the first of June, will always be shipped with a loss equivalent to 25% to 40% of the crop produced, by means of drops, wind injury, etc., and the quality will suffer because the fruit will grow too large in size, become punky and dry, and in many varieties the seeds will sprout in the fruit and so injure it that it will not be fit for marketing purposes at all.

THE BEST GRAPEFRUIT The Improved Conner Prolific Grapefruit is a sport from the original type and has a ripening season from two to four weeks earlier, as well as a much finer grain, a thinner and better peel, and generally higher in quality throughout, and is destined to take the first place of all early types of grapefruit produced. We have been unable to produce enough trees of this variety to satisfy the demand since its introduction and exhibition to hundreds of our customers during the last five years. We are producing this year in the neighborhood of 30,000 trees of this variety, budded direct from the original trees and from 18 trees propagated direct from this original tree and brought into bearing and tested to be equal to or better than the



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original tree itself. But this number of trees will not be equivalent to the demand we will have for this splendid new type of Conner Prolific Grapefruit.

STANDARDIZING FOR MARKET PAYS

By making proper choice of varieties and selecting only such standard types that sell for the highest market prices, the earning power of the grove that is

to be can be wonderfully enhanced, because you will be producing when your grove comes into bearing only the type of fruit that will earn the highest amount of money for you, and your grove should, by all means, be a producer of more profit than any of the old groves that exist in Florida today. The planting should be adapted to your soil as to both stock and variety, should not contain too large a number of varieties, but rather stick to one variety of oranges and one variety of grapefruit that will give the best results as to the quantity produced and the quality of the fruit. There is no agricultural or horticultural venture that has ever come under the writer's observation that could approach a successful citrus fruit grove in earning power, acre for acre and dollar for dollar invested.

ADVICE—WHERE OBTAINED

Citrus fruit growing is not an intricate thing, by any means. If information on subjects in connection therewith is desired, we have at Gainesville the Florida Agricultural Experiment Station, with its staff of scientific men, who are continually giving out information that is right to the point and of wonderful value to the novice in citrus fruit culture; and, if applied to, this station will furnish you bulletins on all subjects relating to citrus fruit culture free of any cost to you.

Furthermore, nurseries, as a rule, are always in a position to furnish reliable, up-to-date information with regard to all points connected with the cultivation, fertilizing and otherwise treating the grove to bring it into bearing. It is certainly to their advantage to give this advice in a careful, conscientious manner, because it redounds to their credit to have their trees grow off rapidly and come into full production as soon as possible after they are planted.

VALUE OF A GROVE

The value of an up-to-date orange or grapefruit grove of standard varieties, which is six or seven years old, is fully \$2,000.00 per acre; and if proper soil is chosen in a good location, and if the trees have proven themselves successful bearers, it would be no trouble to sell your grove at this price. Therefore, there would be profit in making the grove and selling it even if the builder should decide that he did not wish to keep it for himself, or if any accident should befall that would make it necessary to sell it. Since the bearing power is the chief factor of fixing value, this means that Ocklawaha Nurseries trees should be used.

THE FLORIDA CITRUS EXCHANGE—HOW IT OPERATES TO ENHANCE GROVE VALUES

There is no longer any question as to the earning power of a citrus grove in Florida. Fifteen years ago there seemed to be some question about this; but it was because the Florida citrus fruit growers, while being able to produce the finest citrus fruits grown in any citrus growing section of the United States, had left out of their consideration up to that time proper methods to dispose of their product. If any of the large steel mills, or other large manufacturing industries of the United States, should manufacture the greatest quantities of their product at the lowest cost imaginable, they would never be able to declare a dividend until they had found a successful marketing system for that product. It was selling goods



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that built value of Bethlehem Steel stock, and the same rule applies to the Florida citrus fruit grower. Finding themselves in such a position the producers of Florida oranges and grapefruit directed their thoughts and energies to the perfecting of a marketing system for their product. The outcome of their thought and enterprise was the organization of the Florida Citrus Exchange, which in its turn has brought about up-to-date methods of picking and packing, and the founding of a sales agency that is second to none employed by any industry on a large scale operating in the United States. This organization is co-operative in its work and applies its benefit to the grower at the actual cost of such service. It employs an able sales manager, an up-to-date traffic man and claim agent, a general business manager, and a full office force. Working under the sales manager are district managers and agents in the various markets of the country. The business of the Florida Citrus Exchange is supervised and directed by a board of directors, who represent the various sub-offices located in the different heavy citrus fruit-producing centers of the state. The growers who support the organization work through local associations, and all growers in such local associations ship through one common packing house, under the direct supervision of a skilled manager, employed for the purpose of seeing that their fruit is picked from the trees, washed, polished, packed, loaded in the car and catalogued in the best possible manner, and according to its quality as a market product. The result of such an up-to-date marketing system has been to build values for each and every one engaged in citrus culture, and today when you produce a box of oranges or a box of grapefruit you are not faced with a problem when it comes to selling it, but turn it over to a marketing agency with representatives in every market of the United States, who furnish full information with regard to the markets through which the sales manager is able to place every box of fruit entrusted to his care in a market that will give him the greatest return for what his shipment represents.

IT'S YOUR OWN FAULT IF YOU DON'T MAKE MONEY

The only problematical thing that there is to consider with regard to the profit to be obtained from a citrus fruit grove is the If or Not to be applied to the grove receiving proper or improper care from the time it is planted until it should come to the producing stage. Just as surely as you plant a citrus fruit grove and give it the proper care and consideration that a successful investment of this kind entitles it to, just that sure and certain the grower will be to bless the day that he put his money down on a sure winner investment like this.

Conduct of the New Grove

This should not be approached in fear and trembling, because it is not such an intricate problem. The application of common sense and proper business methods, together with the following suggestions, are all that are necessary to properly care for an orange grove, and especially throughout its early years.

The first requisite in planting a grove is to get a good piece of land. This can usually be judged by the timber growth, which, if tall and straight and heavy in character and well leaved, usually indicates not only a good surface soil but a good subsoil. This done, the next thing to do is to properly clear it of all stumps, roots, brush and timber of all kinds, then thoroughly break up the land from four to six inches deep, and thoroughly cut it up with a spading or cutaway harrow, then let it stand long enough for the ground to settle, when it is ready to plant the



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trees. Where it is possible do all this work in the spring. After the land is broken up and harrowed, plant a crop of cowpeas or velvet beans, which plow under the following fall before the trees are planted, and great benefit will result to the soil through such a method of procedure.

TIME OF PLANTING The trees should be planted from the first of November to the first of December, if possible, so that they may put out a short growth of leaves and twigs, which, in their turn, will develop the root system on the trees, while the tree remains dormant through the winter period and up to the usual time for spring growth. Do not get the idea that it is necessary to wait until after danger of frost to plant your trees, for if your trees are planted early in November and put on the foliage as described above, the chances are that those trees will remain throughout the winter season in a more dormant condition than they would if left in the nursery. If the trees are planted during the latter part of December and through the middle of January, they stand slightly more chance of being injured by cold than if planted through November. If you leave the trees in the nursery until as late as the 15th of January, they will usually be in sap when you get them, and not in such good condition to plant as they would be in their dormant season. Furthermore, by late planting, you will have to contend with the drought season, which usually extends from the middle of February until the middle of May, and sometimes as late as the middle of June, through which period extremely dry weather is practically the rule in Florida and elsewhere that citrus fruits are planted.

WHEN YOUR TREES ARRIVE If in bundles or bales, bury the roots in the ground until ready to plant. If in boxes, haul them to the grove and if ready to plant, take off the cover of the box and keep them right along with you in the packing material in which they are packed and plant them direct from the box. Always dip trees in water before planting. Never expose the roots to frosty air or sunshine. Do not let them get dry. If not ready to plant at once, haul the trees to a cool, shady place—a shed is preferable—and keep them in the cases until ready to use them. Our packing is so carefully done that our trees will, without difficulty, be safely kept in the cases for a month after packing, in the winter season. In the summer planting season, immediately take them from the cases, water well and heel in until ready to plant.

HOW TO PLANT TREES Always plant your trees high, say at least two inches higher than they stood in the nursery. The crown roots highest on the stem of the tree may be calculated as one inch below surface of the ground in the nursery. Have crown roots sloping downwards from the tree about four inches to the foot in length, spread the roots out well and separate each layer as the hole dug for planting is filled. Use only rich top soil to fill the hole and sift it in rather than to throw in by spadeful at a time. As you finish up, elevate the outer rim of the hole so as to leave a saucer shape equal to the diameter of the root system of the tree, and into this place pour, from three feet high, at least three gallons of water. Let this settle two hours, then draw the loose earth of the elevated rim in around the tree until all is level, when it must be firmed down, preferably by treading. This is best done by placing the toe of your boot to the tree and pressing first and heaviest with the heel, otherwise you might either break the lateral roots or cause them to stick upwards at the ends, instead of remaining buried as placed.

On low land plant your trees still higher, even six to eighteen inches may be



used, and in time the land in between the rows of trees may be elevated to meet this elevation, leaving the trees on slight ridges one way and those ridges should be placed so as to better drain the land in extremely wet weather—disregard direction, but be sure to get the drainage. See Page 17—"Prairie Soils."

HOW FAR APART TO PLANT YOUR TREES

We will assume that in planting a grove you are doing so for the purpose of getting the greatest sum of money possible to obtain from your investment and at the lowest cost. There are other factors to come into consideration, however, in connection with this subject, among which may be that of safety from cold injury. In our own groves we have trees planted at various distances and have watched their development and productiveness closely, and during the cold weather occurring in February, 1917, we also had occasion to note their condition as to injury; and our conclusions are that trees planted thickly on the ground have stood the cold weather better than trees planted at greater distances because of protection from wind afforded by the thickness of the trees.

CLOSER PLANTING REDUCES INJURY BY COLD WEATHER

In groves where we had 108 trees to the acre their condition after the cold wave was fully 100% better than where the trees were planted 70 or less to the acre. And these closely planted trees gave a fair crop of fruit the following season, while those planted farther apart were injured to such an extent that they did not produce at all. We have found too that trees planted close together will not generally grow to large sizes, but will, as soon as the soil is well populated with the root system, settle down to hard work in the way of heavy bearing, but yet will produce sufficient growth every year to furnish new wood from which the succeeding crop may be produced.

HEAVY FRUITING INFLUENCED BY CLOSER PLANTING

The incorporation of the soil by the root system of the tree is at once an inducement to heavy bloom. Proper methods of cultivation and a sufficient amount of moisture to fix this bloom, together with proper methods of spraying with lime-sulphur to destroy thrips, will assure the grower each year the production of a heavy crop of fruit. This has been made manifest in our test grove where we have closely planted trees 7 and 8 years old, planted at varying distances, of from 134 to 108 to the acre, and which have for the last four years borne increasing crops of fruit, while the size of the trees has been held down moderately, yet increased as fast as desirable to have them do so, so that each year additional bearing surface has been afforded by the growth of the tree and each year excessive growth has been prevented and maximum crops have been the result throughout the entire grove. Compared with these closely planted trees, those planted at the rate of 50 to 70 to the acre have produced trees from one-fourth to one-third larger, but have not produced as much fruit per tree as the closely planted trees have produced. If you will ask your florist he will tell you that if he wishes to procure a heavy bloom on a rose, or other shrub, that he will take it from the open ground and confine its root system in order that his desire may be brought about, and the same is absolutely true of the orange and grapefruit tree, and you will certainly find that if you will plant your trees at the distance of 20 feet apart each way, or 18 or 20 by 25 or 30 feet apart, that you will obtain more fruit than if planted in wider squares. It may be desirable because of the necessity of getting drainage on lands in some portions of the state to plant the trees a wider distance one way than the other, in order that a water furrow may be



OCKLAWAH NURSERIES

provided through the wider middles. We can see no objection to widening the distance between rows one way where a water furrow is to run down the middle, because the root system would be naturally confined to a certain bedroom by the trees in one direction and the water furrow from the other and the same results might be obtained.

PROFIT GREATLY INCREASED BY CLOSER PLANTING

If you plant trees at the rate of 100 trees to the acre in comparison with those planted 30 feet apart or 49 trees to the acre, you have twice the number of trees on an acre of land that you have by planting the wide distance. Common sense will tell you that the greater number of trees will double up the quantity of fruit produced and at the same expense for cultivating the acreage used. More fertilizer will be required at first, but comparatively less per tree when your grove is in full bearing. We have one block of grove on our place that is now over fifteen years old, where the trees are planted 20 feet apart each way, and the product of that grove was last year 13 boxes to the tree, and trees in this grove did not have a sufficient spread to interfere with their cultivation and will not have a sufficient spread to interfere with the work done in the grove as long as they are kept at the highest producing point instead of being encouraged to make rapid, luxuriant growth. We want a tree to have ample room in the groves, and believe that this is afforded where trees are planted at the rate of 100 to the acre, and in our cultural work have proven that this is not too close, by any means, and that the closer planting and consequent checking of growth by heavy population of the soil by the root system has been responsible for the production of heavy crops of fine quality fruit year after year, and at an increasing rate as the years go on. Therefore, we advise that where you can plant trees on the level or at slight elevations, in all of the good strong soils, fairly well supplied with moisture, at the rate of 108 trees to the acre, or 20 feet apart each way, that you do so. Where your soil is high and sandy and the lemon stock is used, make your distance 20 feet apart one way and 25 or 30 feet the other. Where your soil is low and considerable elevation is necessary, you will of course use sour orange stock, and plant 18 x 27 feet, 20 x 25 feet or 20 x 30 feet, according to the elevation you will give the trees; and bear in mind that the closer you plant in accordance with the above and the greater number of trees you get on your acre of land the more cheaply you can fertilize and cultivate your grove at a per tree or per box cost, and the greater by one-third to one-half will be the quantity of fruit produced per acre; hence the more profitable the grove from the amount of money invested.

The number of trees required to plant an acre of grove is as follows:

20 x 20 ft.....	108	20 x 30 ft.....	70
21 x 21 ft.....	100	18 x 27 ft.....	79
25 x 25 ft.....	70	30 x 30 ft.....	49

FERTILIZING AND CULTIVATION

Do not fertilize your trees when first planted. We will assume that they have been planted either through November or early in December, and if so, they may be fertilized about the middle of February, at which time from 1 lb. to a one-year-old bud to 2 lbs. for a two-year-old bud may be applied in a circle extending from the tree to at least three feet from the tree, sprinkled evenly, and worked lightly into the soil with the hoe in such a manner as not to scatter it away from the place distributed. After this time the young trees should be hoed regularly and the ground repeatedly stirred lightly on the surface to keep the moisture content of the soil



OCKLAWAHA NURSERIES

up to normal. If your trees are on sour orange stock it is absolutely necessary that you anticipate the drying out of the soil to the point of danger to the tree, and water the tree moderately, and with such a quantity of water as to afford ample moisture without using too great a quantity to keep the tree in perfect condition. Do this through your first dry season after planting, and you will bring your tree planted on sour orange stock through its first season in the pink of condition and thereafter it will give you absolutely no trouble as long as you keep the weeds down from around it and the ground properly fertilized and cultivated.

Cultivation should be done from the middle of February following the planting of the trees through the entire first summer. The entire surface of the ground need not be cultivated, but that portion of it lying within six or eight feet of the tree should be kept cultivated and clean, which can be accomplished by going over the ground every two or three weeks during the first season after planting. The middles between the rows of trees may be allowed to grow up in grasses, but would be improved better by being planted to cowpeas, velvet beans or beggarweed, and plowed under in the following fall, as the content of the soil will be so much greater in plant food by so doing.

The next fertilizer may be applied to the tree at the beginning of the rainy season, which usually comes during the month of June, at which time $\frac{1}{2}$ lb. more per tree may be applied than at first; and a third fertilizing may be applied about the 1st to 20th of September, using $\frac{1}{2}$ lb. more per tree than in second application. Each time you fertilize get a little further away from the tree, and be careful to hoe the fertilizer carefully into the soil and not to spread it from the point originally applied. Increase the quantity $\frac{1}{2}$ lb. each application until at each fertilizing time you are using 5 lbs. per tree; and increase thereafter according to the needs of the tree, which you will by that time become familiar with.

The soils of Florida are so diversified in character that a positive rule must not be laid down for the application of fertilizer. The above schedule of quantity and frequency of application will apply generally to such land as that described as a good grade of high pine land.

The fertilizer for the young tree should contain

4% to 5% of ammonia.

3% to 4% of potash.

6% to 7% of phosphoric acid.

As some of the heavier soils are well supplied at first with both potash and nitrogen, and are capable of growing the young tree with little additional nitrogen or potash, these soils should be fertilized more lightly than the lighter grades and the tree watched carefully, and with the first appearance of dieback the quantity of fertilizer applied should be reduced. Acidity of the soil is quite often the chief cause of dieback, however, and wherever this condition appears you should satisfy yourself that your land is well drained, as acidity of the soil and excessive moisture are two factors that usually go together. If your soil is low and impossible to drain, the cultivation should be very light and the acid condition neutralized by frequent applications of ground limestone to the extent of from 1200 lbs. to 2000 lbs. per acre. In such low areas the ground should always be elevated from 18 inches to 2 feet before the tree is planted, at the point where the tree is to stand. This provides better surface drainage and permits the passing away of excessive rainfall through the water furrow created by such elevation.

Acidity of the soil is especially likely to occur where palmettos have grown heavily, and their acid-bearing roots still remain in the soil after the palmettos are removed. In combating acidity from this source generous application of lime



OCKLAWAHA NURSERIES

and deep plowing afterwards, before tree planting, is a remedy, as the lime must be brought in contact with the acid strata in order to neutralize it.

Where dieback has already injured the tree, or where it is gaining headway, an application of bluestone at the rate of $\frac{1}{4}$ lb. to a tree one year old to 2 lbs. to a tree four years old is generally beneficial; and always where dieback shows up very light cultivation, or no cultivation at all, should be done until conditions improve. Of course, weeds and rank grasses should be chopped down so that the tree will not be choked out nor robbed of its moisture.

MULCHING This is better done in the early spring after banks are removed and after danger of cold is past. Its chief benefit consists of retaining moisture and keeping the earth cool about the roots. Straw (not pine-straw), dead oak or other leaves, peavines, potato vines, or any other material of a like nature, may be used.

SPRAYING Spraying is absolutely necessary in order to keep a tree healthy.

With such varieties of citrus as grapefruit, limes, lemons, tangerines and King oranges, a fungous disease, known as lemon scab, quite frequently attacks the trees with the very first growth that they put out. This fungous disease can be prevented if the young leaves and growth are coated over with a fungicide. The best we have found for this purpose is lime-sulphur solution, applied to the young growth during the dry season at a strength of 1 to 50 or 60, and during the rainy season as strong as 1 to 40 or 50. Lime-sulphur is also valuable for the destruction of purple mites, red spider, and other small insects of their kind. The presence of mites may always be determined by the dusty appearance of the leaf, which looks usually as if either a grayish powder or a very light dusting of flowers of sulphur had been sprayed over the leaves. Frequent sprayings with lime-sulphur prevent all these pests and should be applied with the very first growth that comes out on your trees. The trees will respond readily to this treatment and will grow off luxuriantly from the first and will frequently make two or three times the growth in one season with spraying applied than if no spraying had been done, and spraying is cheaper than fertilizer.

For sucking insects of the leaf and wood, like purple scale, whitefly, and other insect pests, a miscible oil spray should be resorted to, but this is not usually called for until the second or third year after planting, at which time slight infestations of scale insects may occur. Spraying for insects when the larvae are young and easily killed is the best time for doing work of this kind. Whitefly are usually most effectively sprayed about the middle of April, when practically the entire colony will be in the larval stage. Purple scale are in this stage from the 5th to 20th of May and are more easily killed at that time than at any other time during the season. One good, thorough spraying to a young tree, where care is used to apply your spray material to all parts of the bark, and using extreme care to thoroughly wet the under portion of the leaves, will generally make a good clean-up of these insects.

PROTECTION FROM COLD WEATHER

Protection against injury by cold weather for the first five years after the tree is planted should always be practiced in all groves planted in the citrus belt of Florida, Texas, Alabama, Louisiana and Mississippi. It does not necessarily follow that because this is a wise proceeding that the orange groves are frozen out every year, nor that there is extreme hazard of this kind. If that were true, the large bearing tree of from 40 to 75 years old would not be found today in the



OCKLAWAHNA NURSERIES

bearing groves of Florida. Neither would the hundreds of thousands of young trees from two or three to ten or twelve years old be coming into their full bearing as they are today. Great fortunes have been made from hundreds of citrus fruit groves in Florida which never had a fire-pot or any other means of protection from cold; while in other well defined areas, where it seems that cold is more likely to occur, it has been almost impossible to bring a young tree into bearing because of this difficulty. Fortunately, these areas are small, and are rarely found in this state south of a line drawn from Crystal River on the West Coast to New Smyrna on the East Coast; and north of this line, through Marion County and the southern portion of Putnam County, are several of the most profitable producing sections of the state. There is no frost line on the mainland of Florida, hence the necessity for protection against the occasional cold that may or may not occur in twenty years.

After thirty years' experience in citrus fruit growing in Orange County, which is a little east of the geographical center of the state, the writer has determined that the risk of cold is not great enough to warrant putting into our groves smudge pots or other means of fire protection, as only once or twice during the last six years have anything like heavy frosts occurred, and until February, 1917, no injury has been done any trees in our groves or nurseries that would approach anything like a loss for upwards of twenty years. Therefore, the only means of protection that we apply is sufficient banking up of earth around the young trees the latter part of December to protect the budded portion of the tree from frost in case the temperature goes low enough to do any injury. And this method of protection should be applied to all young trees for the first five or six years after planting. In the case of injury to the tops sufficient to necessitate cutting back portions of the trees, or even cutting the entire tree back to the point where banked, the tops will very quickly recover, and where a tree has been planted three or four years the top that will be regrown in one season because of the fine spread of root system procured, will be practically equal to what the tree had before it was cut down, and the next year it will begin bearing again as if it had never been injured.

So we urge all planters to amply protect their trees in this way.

Where possible to choose the location for your grove on the south or southeast side of a large body of water, do so, as a grove so located is practically immune from cold injury, as all of our cold waves come from the northwest and are usually accompanied by a strong wind which wafts the warm air from the water and causes a considerable difference in temperature in a grove so located to groves which are not protected in this way. Heavy belts of timber to the north and northwest have also been found beneficial in protecting trees from cold weather, and are almost as beneficial as water protection. Where exposed to strong winds, the planting of camphor trees, or other trees of a like character of growth, has been found beneficial as protection from cold and wind injury.

SPROUT REMOVAL Rubbing off sprouts when the tree begins to grow is necessary when the sprouts are not over a week old and 1 to 2 inches long. They should be removed to a height of 12 inches from the ground, at such regular intervals as to not permit them to grow too large, when removal would injure the tree and leave a scar on the stem.

If for any reason satisfactory growth cannot be obtained on the top of the tree, one good sprout should be trained from a point just above the bud union and grown to make the tree. It sometimes occurs that such a course is made necessary because of injury from cold or a setback from drouth or too close



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pruning after growth commences. Too much pruning is injurious. Remember always that leaves are necessary to root development; all plant foods are assimilated and distributed by the leaves, therefore do not remove any sprouts coming out above the bud except those necessary to give form to the tree until your tree is at least 3 years old.

WHY WE CAN ADVISE YOU ABOUT STOCK ADAPTABILITY TO SOIL AND VARIETY

The value of the different stocks named in this book has been determined in our own test groves, and these groves cover six grades of land, light, sandy, mixed oak and pine—high rolling pine, 80 feet above water level, pine underlaid with clay, high

hammock, low hammock, and heavy hammock, and flatwoods land. Certainly this about comprises the list. No other nursery in Florida has such extensive groves as the Ocklawaha Nurseries. No other nursery can possibly calculate the value of the different stocks on the different soils directly under their care and supervision as the Ocklawaha Nurseries can. Therefore, we believe that we are the most competent authority on this subject, and in our groves you will find the result of planting each and every stock we describe on each different soil enumerated. Come and see or take our word for it that we are RIGHT. We have always tried to make the Ocklawaha Nurseries the veritable home of the finest citrus trees in the world.

Standardizing Varieties for General Grove Planting

As late as 1895 the groves of Florida, whether they consisted of a hundred or a thousand trees, were so mixed with varieties that it would be almost impossible to tell whether they were orange, grapefruit, lemon, tangerine, mandarine or lime groves. In fact, there was such a diversity of varieties and kinds planted that it was impossible to make distinctive shipments of fruit from these trees. When the freeze of 1894-5 came and cut these trees down to the ground, the growers had already realized the necessity of doing something to standardize their production, and it was then that standardization began.

In many localities, where propagation work had been taken up a few years before for the purpose of improving the types of fruit produced in the grove, local varieties had come into prominence, and the work of fixing these in the groves commenced after the freeze. In some localities large quantities of Ruby oranges, in other localities large quantities of grapefruit, and in still others Valencia Late, Pineapple, Homosassa, Parson Brown, Tangerine, etc., were budded into the sprouts coming up from the frozen trees. The result was that these new varieties gained a foothold, not only in a local way, but in a general way, and from the mixup careful shippers separated, and introduced the various varieties in the general market of the country. These varieties, however, were not separated except in a few cases, where the product of the grove was properly handled by large shippers, under their variety name.

As the bulk of the fruit produced in the state was either sold in the grove to speculators in the season's crop, or gathered and sold on an f. o. b. basis through brokers, it was not thought necessary to separate the different types and varieties that the grove produced, but it was generally all shipped in one conglomerate mass—Pineapple, Ruby Blood, Parson Brown and Homosassa, and other varieties of oranges, shipped in the same box without any distinction as to class and type of fruit.

The marketing of Florida oranges had its ups and downs, and the growers

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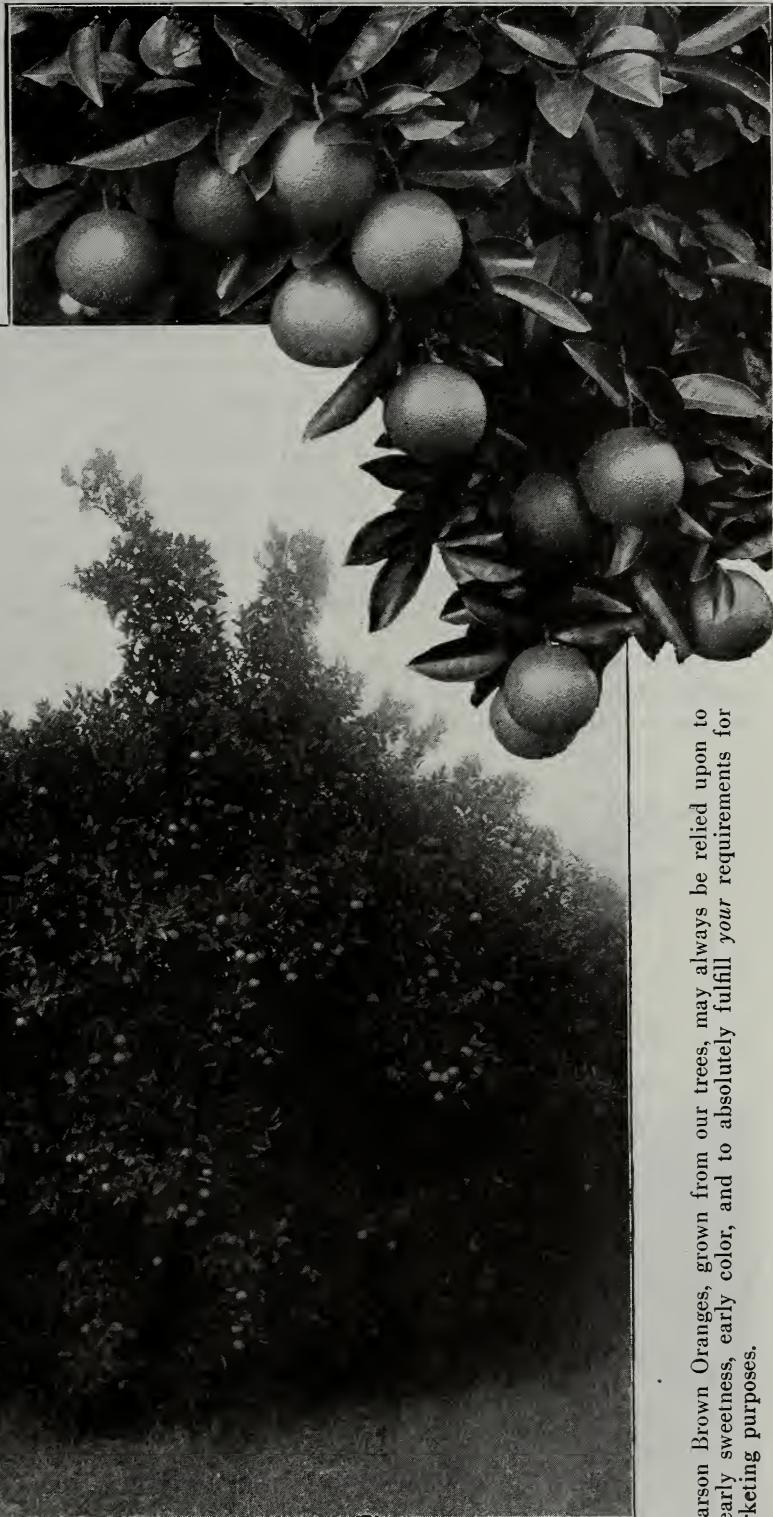
were generally forced to sell at such low prices that finally the Florida Citrus Exchange was organized, and with this organization came better methods of packing, shipping and selling our product, and together with it all, separating the better types from the poorer types and by that means obtaining a much higher general average for the fruit crop shipped. Out of this distinctive selection the Pineapple, Parson Brown, Ruby Blood and Valencia Late have come with flying colors, and today these varieties have standardized themselves and made for themselves in all the markets of the country a reputation that is so valuable in a trademark way that all shipments of these varieties are packed and sold under their variety names. The result of establishing these standards has been that more than four-fifths of the varieties usually propagated by the nurseries have been dropped and in their place have been propagated the standard varieties that the Florida growers have proven to be the most valuable for market production.

Ocklawaha Nurseries were among the first to make distinction as to types, and we have cut our propagation work down now to where our entire production in oranges is confined chiefly to Parson Brown and Conner Seedless oranges for early; Homasassa, Ruby Blood and Pineapple for midseason to late midseason fruits; and Valencia Late for the late season oranges; and in grapefruit we have cut out everything but Improved Conner Prolific, which is extra early, with its season of ripening from the middle of September to the last of October; Conner Prolific, with its season of ripening from the 15th of October to the 15th of November; and Marsh Seedless Grapefruit, with its season of ripening from the first of December to the first of March.



Two-year Buds in Nursery—Note stocky character

Remember, Parson Brown oranges always fruit better and ripen with color earlier on soils ranging from medium low pine to heavy low hammock lands. They are a sure success on flatwoods heavy soil and succeed poorly on high pine. Plant accordingly.



Carney Parson Brown—Always prolific

In our 12-year-old trees the type of tree and the type of fruit exactly like the parent trees in Carney Grove. More pedigreed trees—and your trees were budded from this tree's best production.

Carney Parson Brown Oranges, grown from our trees, may always be relied upon to produce early sweetness, early color, and to absolutely fulfill *your* requirements for early marketing purposes.

Oranges

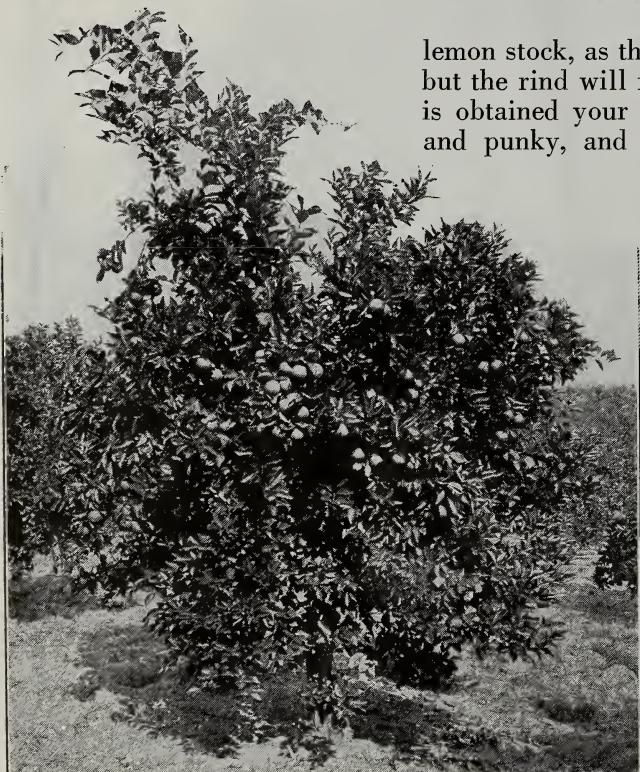
The Florida orange has, under improved marketing conditions, become the standard by which all oranges are judged, and during the last four or five years Florida oranges of good quality have led the market in prices obtained over oranges offered from any other source, at an advantage of from 25c to \$2.00 per box for the variety and class represented by the Florida shipments. You should take heed, however, and by all means plant on your soil the variety and root stock that is best adapted. You may be guided largely by the success of others in your immediate neighborhood as to what variety and what root stock you plant, provided soil conditions in your land compare favorably with those in the other groves. Choose your varieties because of the conditions favoring them where you are going to plant. Do not plant a Parson Brown or a Valencia orange for the express purpose of getting the same amount for it that you have read of some one else getting from a grove perhaps one or two hundred miles away from the point you are going to plant, as it is absolutely certain that if you will plant a variety that is adapted to your local conditions your success will measure up with the success of some one else at some other place who has planted other varieties for the same purpose.

Elsewhere in this catalog this subject is treated fully. Be sure and read this catalog thoroughly before deciding as to what you will plant, or ask us and let us give you the benefit of our experience.

EARLY VARIETIES Early oranges should not be planted on lemon stock, as the juice of the fruit may mature but the rind will remain green, and before color is obtained your fruit will grow coarse, woody and punky, and be entirely unsatisfactory for that reason. We do not propagate early varieties of oranges on rough lemon stock.

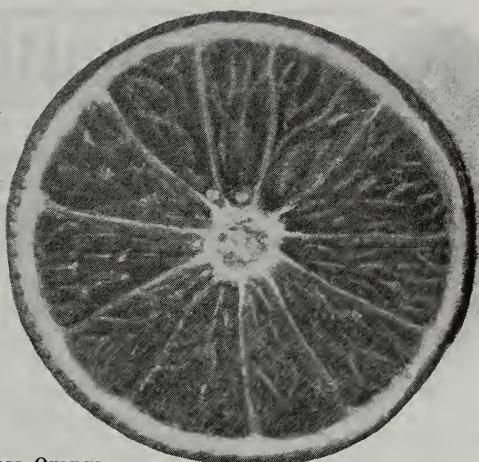
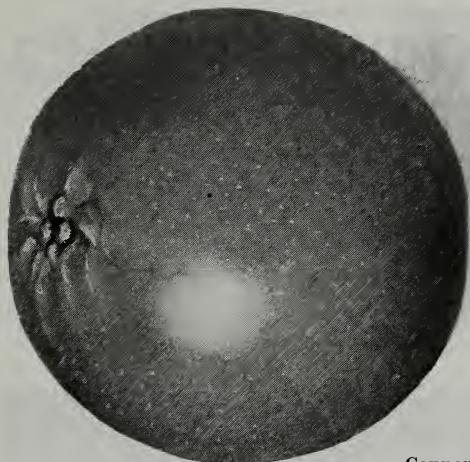
Early varieties of grapefruit are highly successful on lemon stock, planted on high pine land, and equally so on sour orange stock when planted on low land, well supplied with moisture and humus and underlaid with marl or clay. Land of this kind makes the very best upon which to plant early varieties of either oranges or grapefruit.

CONNER SEEDLESS ORANGES.—We have propagated this variety for over ten years. It originated from a seedling tree and at first its most desirable quality was represented in its seedless charac-



Conner Seedless Orange

The most rapid grower of all. Carney Parson Brown's only successful rival



Conner Seedless Orange

From a painting furnished by Bureau of Pomology, Washington, D. C.

ter. It is the most uniformly seedless orange that has ever been propagated from this type in Florida. Its ripening season, at which time good color of peel is obtained, is in November, although sweetness is obtained generally through the month of October. This variety compares favorably with the Parson Brown in this respect, and shows color about two weeks earlier in the season than does the Parson Brown.

The Conner Seedless orange is especially well adapted to planting on the flatwoods and moderately low or high pine lands, where the soil is medium to heavy in character, and where abundant moisture may be secured. It is of a native type, from which all the best varieties for Florida production have originated. It does not come into full production as early as some other varieties, but begins bearing heavily when five or six years old, after which it will bear regular, heavy crops of fruit of an exceedingly fine quality and flavor. The color is from orange to reddish in tinge like the Pineapple, which makes it attractive, and which will sell it at good prices early in the season. It keeps well on the tree and holds its good qualities until as late as March first. The growth of the tree is more rapid than that of most other varieties; it is upright, well formed, thrifty and vigorous, and carries its heavy crop of fruit in good condition. It is more hardy than most types, and information that we have had from it, where it has been planted in cold locations, indicates that it will go more safely through a low temperature than any other variety of citrus fruits. This variety should be planted in large quantities where early types are desirable.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF PLANT INDUSTRY
Washington, D. C.

Mr. O. W. Conner, Tangerine, Fla.

Dear Sir: I am just in receipt of yours of the 18th instant and also two specimens of your seedless orange. These were forwarded to me by Prof. Webber of this Department.

After cutting one specimen I find that it is truly seedless, very juicy and sweet, and all things considered, a very fine orange. It just suits my taste.

Thanking you for the privilege of examining this fruit, I am,

Yours very truly,
G. B. BRACKETT,
Pomologist.

Description of Conner Seedless Orange, by Bureau of Pomology at Washington, D. C.: "Nearly spherical, slightly oval, size medium (200 to 150 to the crate), surface of peel smooth, with slight depression over largest glands. Skin $\frac{1}{8}$ inch thick; color, reddish orange to orange. Axis solid. Very juicy, heavy and solid. Aromatic, high flavored, sprightly fruit."

PARSON BROWN.—The Parson Brown orange originated from the seedling strain. It is a distinct variation from the usual type, however, because of its early season of maturity and of its finer quality than the original seedling orange. Usually during the month of October this orange takes on the same degree of sweetness that the ordinary seedling orange has in December; and while it does not show color in most localities until the middle to the last of November, it is palatable and of fairly good flavor.

During the years in which this variety was introduced in the markets of the country, Captain J. L. Carney, in his island grove at Lake Weir, made a practice of gathering his fruit and coloring it artificially before shipment, in order that the color as well as the juice content might correspond with the ripe Florida orange. This is not practiced in any shipments of this variety today, but they are usually shipped with their green color and labeled "Parson Brown Orange" to distinguish them from other types of fruit shipped at the same time. We do not favor the shipment of a green colored fruit, and therefore we are not very enthusiastic over the Parson Brown orange as one of the wonderful possibilities of Florida's

OCKLAWAHA NURSERIES

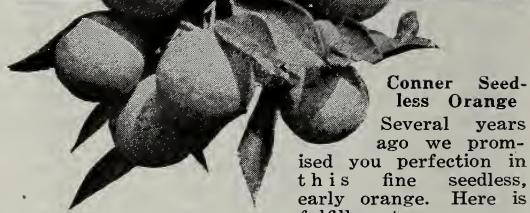
production in early citrus fruits, and we strongly urge and recommend that wherever this variety be planted that it be planted as an early midseason type and left on the tree until fully colored, at which time there is no better orange to be found here or elsewhere than the Parson Brown. Shipped to market early in December, it is a favorite for Christmas trade, and sells readily at good prices.

The Parson Brown is a much abused variety because of the fact that it has been budded and rebudded for over 25 years from trees of all kinds and manner of description. It has even been budded in nursery form, and sold under its true name, from seedling trees originating from the original Parson Brown orange, which is no more true to type than any other seedling would be.

We have had letter after letter come into our office during the past few years, telling us of Parson Brown orange trees purchased from other nurseries and that were nothing more nor less than seedlings which were not producing any fruit at all or producing nothing but large, punky specimens, unfit for market purposes. We have advised such parties, as a rule, to cut their trees down and bud them over to either the genuine Parson Brown or to some other type better suited to the soil and location.

In our own propagations, which were made from selected trees in the Carney grove, at Lake Weir, we have found the Parson Brown to be a strictly first-class fruit, producing heavy crops of smooth, fine texture, high quality fruit, and these trees have been especially satisfactory to us, and from these trees our bud selection has been made for all trees of the Parson Brown we have propagated in our nursery. We recommend this variety for planting on medium low flatwoods or hammock land, which have a water table no more than 8 or 10 feet below the surface of the soil; and generally on lands of a rich, heavy, moist character, as with this type of fruit, like other early types of fruit, it is well to hasten the development and ripening season of the fruit to the utmost. Planted in this way the Parson Brown will be found to be a profitable fruit to

grow, inasmuch as it will bring much higher prices than the ordinary midseason type, and be off the trees and be well out of the way before blooming season comes for the next year's crop. The relief of the tree by this means insures a heavier and more normal yield than is generally obtained from trees of a variety that necessitate carrying ripe fruit on the tree later in the season.



Conner Seedless Orange

Several years ago we promised you perfection in this fine seedless, early orange. Here is fulfillment.

We do not propagate the Parson Brown on rough lemon stock because this stock is absolutely unsuited to its production. Neither do we propagate it on grapefruit stock. It is suited absolutely to the sour orange and no other root stock.

Parson Brown is a heavy bearer when properly budded from pedigreed trees, as we bud them. Do not plant Parson Brown on high pine land.

THE ROOT SYSTEM PERFECT

Mr. O. W. Conner, Ocklawaha Nurseries, Lake Gem, Fla.

Gomez, Fla., Jan. 15, 1915.

Dear Sir: The second shipment of trees was received in fine shape and I write to tell you that I am highly pleased with the way you handled and corrected our order. You sent us the best looking trees I have ever planted on the place. They look healthy and vigorous and the root development shows them to be true Quality Trees.

For comparison I placed a one-year bud from your nurseries along side of a two-year bud just received from another nursery which features the root development of their trees so much in their advertisements. Both trees were grapefruit on sour orange stock. Your one-year bud had nearly twice the root development of the two-year bud from the other nursery. When you please us we will tell you so, and if you don't we will let you know just as quickly.

Thanking you very sincerely, I am,

"Boostingly" yours,
C. N. LINDBERG.

Two Copies to Sub-Exchange, Copy to F. C. E. Office, Div. Mgr.'s Office and Retain Copy.

ACCOUNT SALES

FLORIDA CITRUS EXCHANGE

Sale at.....	New York	Agency	Date and Hour Car Ordered	3PM 3/25	19.16
" " "			Placed	330AM 3.26	19.16
For Highland Citrus Sub.....	Sub-Exchange	" " "	Released	PM 3/26	19.16
Ac't.....	O W Conner	Association	Date Sold	3/27	19.16
			Date Remitted	3/29	19.16

F. C. E. No. 4098 Car No. 27898 Initial FCE Sold to. Various at auction
 Sub-Exchange No. 353 Ass'n No. 19 Date and hour of arrival 3/24 826AM At. B. & D.

No. Boxes	Brands	Variety	Price	Amount	Total	Describe Check or Draft you are remitting
237	Monogram	Blue Pineapple Oranges	976.80			Date 3/27/16
1	PC		1.13			Number 1310
122	Monogram	Red Pineapple Oranges	438.55			Drawn by FCE
360						Drawn on FCE
						Endorsed to Broadway Trust Co
						Favor of FCE
						Decay (Each Grade)
						sound
						REMARKS
						Color Good
						Quality Good
						Pack Mostly Good
						Notified of arrival 3/28 Noon
						1 Box 126 size
						Monogram Blue
						Oranges partout

CHARGES			Gross			
Regular Freight			219.60		1415.98	
Excess Freight						
Demurrage						
Refrigeration		Half Tank	50.00			
Extra Ice						
Cartage			15			
Labor						
Auction Charges			35.40			
				Total Charges	305.45	

Space below for use of Sub-Exchange Only.						District Manager
Florida Citrus Exchange Retain	16 c. per box		57.60			
Sub-Exchange Retain	14 c. per box		4.50	62.10		
					1048.43	
					35.40	
					\$1083.80	M.E. Miller,
						Sub-Exch. Manager

PEDIGREA PINEAPPLE ORANGES BRING FANCY PRICES

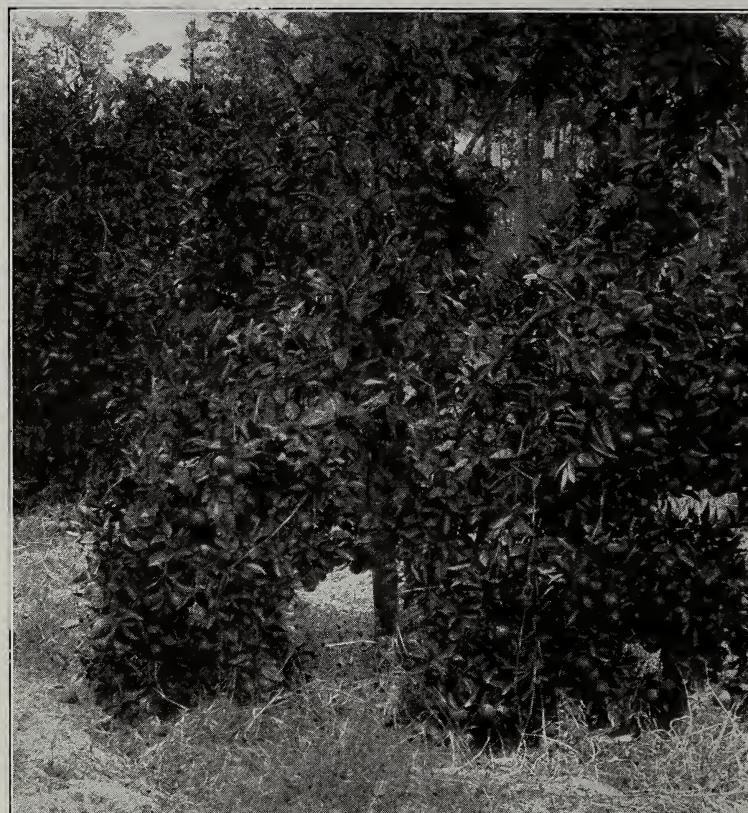
This sales sheet represents a carload of Pineapple oranges taken from our pedigreed grove, packed and shipped exactly as they came from the tree. The Monogram Blue are first grade fancy fruit; the Monogram Red are second grade or choice fruit. There are no third grade and no culls represented, because they did not occur. The average price per box on the tree for this shipment, you will note, is \$3.12, which is a greater sum than that shown by our statement on page 23, under the head of "What Will the Grove Pay?" Pineapple oranges, shipped the same season and the same week that this fruit was shipped, and from the same grove, but from trees propagated in the ordinary way brought us less than \$1.00 per box on the tree, as they sold at \$2.35 per box average in the New York auction; while the lowest price at which any box represented by this account sales sold at was \$3.50 for three boxes of 100 size.

OCKLAWAHNA NURSERIES

MIDSEASON VARIETIES

The term "midseason" is applied to all fruit marketed during December, January and February, and generally applies to the seedling oranges and unnamed sorts, or local varieties that ripen during that period. As to value, these varieties are generally below that of such *standards* as have developed during the past ten years of better methods of picking, grading, packing, under variety name, distribution over the best markets of the country, and better marketing facilities applied.

Certain known varieties of the most attractive appearance and the uniform character have standardized themselves, and standing head and shoulders above them all are the Pineapple and Ruby Blood oranges. It is now absolutely useless to plant the Majorca, Mediterranean Sweet, and a dozen or more of other midseason types, because the market demands such varieties as the Pineapple and Ruby Blood at a much higher price because of the finer appearance and eating quality.



A corner in Pineapple Orange Grove—four years old

PINEAPPLE ORANGE.—The Pineapple orange is, without doubt, a hybrid of the seedling type, and originated in Florida some 25 years ago. When its fruit is at its best and thoroughly ripe, ready to go to market, with all its finer characteristics, there is no finer orange grown.

The Pineapple orange is decidedly late mid-season as to the time of ripening, its fruit being at its best from the middle of January until the middle of February. It is an extremely heavy fruiter; produces fruit, well distributed, over the entire surface of the tree; is medium in size, with a peel smooth as glass, and of a shiny, brilliant, reddish tinge; is usually slightly oblong in shape, and the fruit has such an aroma and such a delightful odor that the grove in which the true Pineapple orange is planted is as highly scented when

the fruit is ripe as it is when the trees are in full bloom; and this is one decided characteristic of the Pineapple orange.

As soon as fully ripe the Pineapple orange has a tendency to drop upon the ground; therefore, this fruit should be gathered as soon after the 15th of January as possible to prevent loss by this means. Do not make the mistake of gathering your Pineapple oranges in the early part of December, or the latter part of November, when they will begin to show the same degree of color that earlier types of fruit will show, as the Pineapple, when at its best, is very highly colored, and the coloring process of the peel starts early in the season, the finishing up usually occurring during the last four weeks it is ripening.

In our propagation of trees for this season's planting we cut over 20,000 Pineapple oranges,

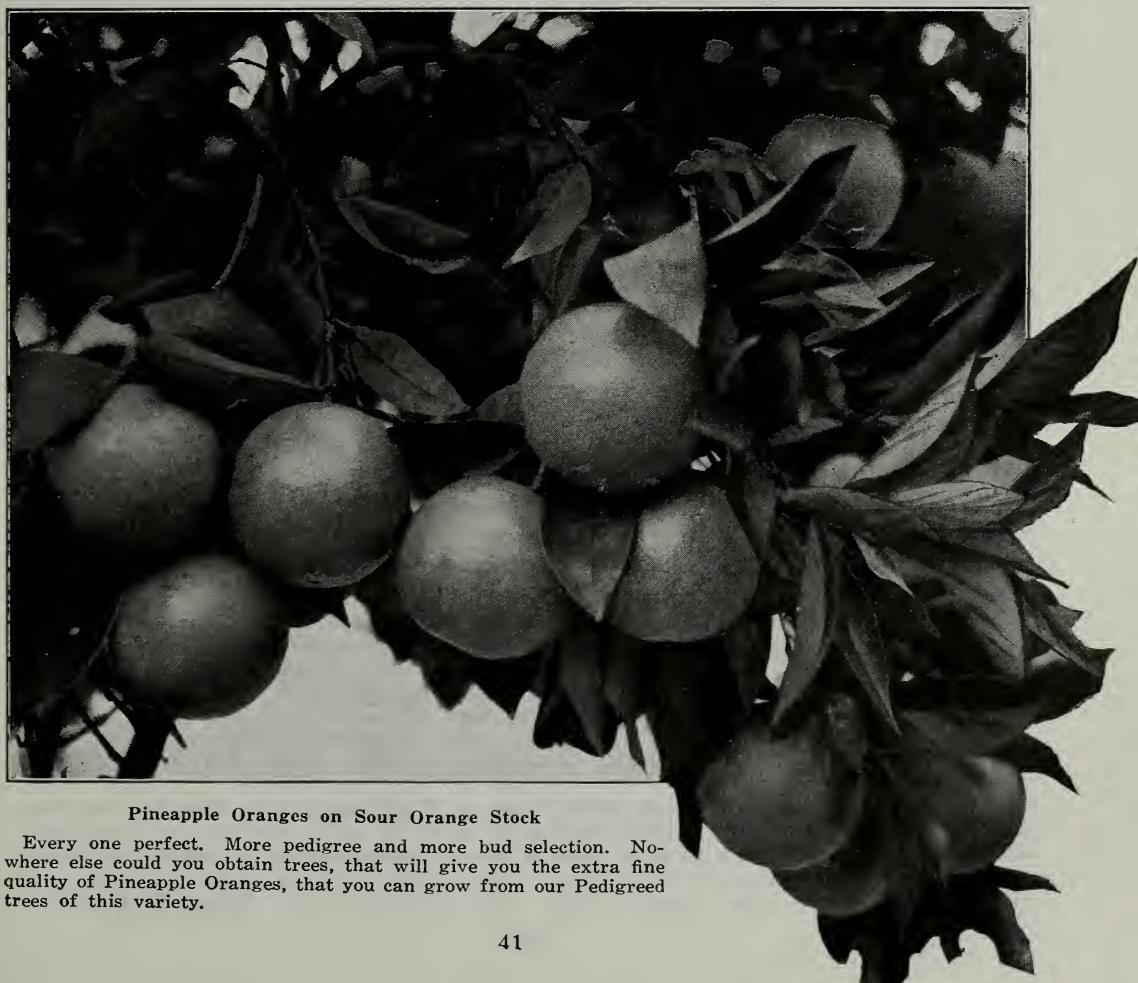
OCKLAWAHNA NURSERIES

with the very finest texture and highest grade and most uniform size, shape and color, from our pedigreed trees, with the fruit stems attached, for the purpose of obtaining budwood for our propagation work.

We have found in 20 years of propagating the Pineapple orange that it is more susceptible to variations and mutations with the old seedling type than any other standard type with which we have experimented. And in checking up results of propagations from nursery trees and young groves, we have found that in three or four generations from the original tree we had only 65 trees out of 100 that were producing anything like the type. In checking up still further, we find that after 11 years of propagation of this kind that only 25% of the trees are producing anything near true to type. And furthermore, we find that in each and every case where individual fruit stem propagations have been made that we have produced fruit exactly like the type selected from the bearing tree for such propagation to the extent of 100% of all propagations made. This proves absolute ability to control by propagation work the type of fruit pro-

duced, as well as ability to maintain a fixity of that type, and control the size, shape and color of the Pineapple orange.

In one instance of our experimental work in propagating the Pineapple orange we obtained the fruit stem of an orange produced on a sport growth (a mutation of the seedling type) from one of our bearing trees and grafted it into a four-year-old root stock to test it for fruit production and to determine if it would produce true to its type. At the same time we selected an orange of the finer character produced elsewhere on the same tree and grafted its fruit stem into another four-year-old root stock, and planted the two side by side and brought them into fruiting. At the end of five years of fruiting, during which time these trees have borne every year, the true type of Pineapple orange has not borne a single orange that differed in any particular from the original selection made. In the meantime, the sport propagation has produced true to the sport type absolutely, with the exception of two oranges, which were borne in 1915, on one small branch of the tree not over 18 inches long, which were the finest Pineapple oranges that the writer



Pineapple Oranges on Sour Orange Stock

Every one perfect. More pedigree and more bud selection. Nowhere else could you obtain trees, that will give you the extra fine quality of Pineapple Oranges, that you can grow from our Pedigreed trees of this variety.



OCKLAWAH NURSERIES

has ever seen. This wonderful re-mutation of the Pineapple orange was exhibited to hundreds of visitors to our place, among whom was Edgar A. Wright, editor of the *Florida Grower*. The fruit stems of these two oranges have been removed from the tree and propagated into new stocks and will be brought into bearing, with the probability of creating a still finer strain of Pineapple orange than we have ever had. These details are stated in order to show the reader just how far it is possible for variations to occur in not only the Pineapple orange, but in any other variety of orange propagated; and the necessity of planting Pedigreed Trees.

We have noted with much interest our recent propagations of the Pineapple orange, and their behavior when brought into check with other methods of propagation, practiced for the sake of experiment at our own plant, and practiced for commercial purposes in several other places in the state, and in no case have we been able to find any propagation work carried on that gives the same high degree of success in producing a strictly first grade of Pineapple orange that we are able to produce from Ocklawaha Nurseries trees, propagated under our method. And we feel that we can offer you today nursery stock of this variety that will produce practically 100% true to one type of fruit, under a proper method of fertilizing, cultivation and spraying, such as practiced in our own groves.

We will be glad at any time during the fruit-ripening season of the Pineapple orange, as stated above, to take visitors to our plant through our Pineapple orange groves, where the trees are planted in check with other than Ocklawaha Nurseries propagations, and let the planter judge for himself the value of the work we are doing with this variety.

It is certainly true of the Pineapple orange that "NO TREE IS A FIRST-CLASS TREE UNLESS BUDDED FROM A BEARING TREE OF A KNOWN QUANTITY AND QUALITY OF PRODUCTION."

RUBY BLOOD.—The Ruby orange if properly budded will always show blood markings from December until the end of its season, which is about the 15th of March. The riper the fruit gets the more profuse the blood markings, until the interior becomes dark ruby in color. The flavor is exquisite, slightly acid, but so well blended with the sweet that there is no more delicious orange produced than the Ruby Blood. The character of this type has been seriously interfered with by improper propagation methods, and the nurserymen who have propagated it have been responsible, because they did not know of the necessity of obtaining budwood true to type from bearing trees that were producing the proper color of flesh and uniform shape of fruit that should be represented by this type. Hence, in many groves of Ruby oranges, a large number of the trees show little or no blood markings, and could not be distinguished by the customer from any ordinary type of fruit. We have made a specialty of budding all our Ruby Bloods direct from trees producing an extremely fine grade of fruit, showing profuse blood markings, and any trees you plant of this variety from our nurseries should give entire satisfaction when they come into bearing.

The Ruby is of medium size, of high color, and when fully ripe shows the blush of the inside color on the outside of the peel. Color of peel develops early in December, but the fruit should not be shipped until blood markings show. We have found this variety eminently successful budded on grapefruit stock and planted on medium high to medium low, mixed oak and pine or flatwoods lands.

HOMOSASSA.—Fruit medium to large, very smooth, thin skin, slightly oval in shape, good shipper owing to its toughness of segment; flesh fine grained, sweet and juicy, adapted to all parts of Florida, Cuba, and especially suited to lower Louisiana. Tree immense in size, bears at about 3 years from planting, and after attaining good size is very prolific; has no "off seasons." We recommend this variety to all who want a strictly high grade fruit.

A REPORT FROM AN OWNER OF A PEDIGREED GROVE

Mr. O. W. Conner, Ocklawaha Nurseries, Lake Gem, Fla.

Dear Sir: It gives me great pleasure to express to you the satisfactory results I am obtaining from the grove located in Tangerine, Orange County, Florida, which I purchased from you. Most of the trees, as you know, are representative of your theory and practice of pedigree development, and certainly no theory could be favored with a better illustration of its value than is evidenced by that grove, and as you for a number of years used it as a source of budwood supply for your nursery, it has been, and is, designated as Budwood Grove, and I am confident it will compare favorably, particularly as to the quality of its fruit, with any grove in Florida.

While it suffered from the freeze of last February, I am happy to say that the trees themselves were not permanently injured, and it is today in most excellent and satisfactory condition. Indeed, you can with safety refer to it as an example of the success of your theory and practice. I remain

Yours truly,

ROBERT W. HUNT.



1 2 3 4 5 6
 No. 1 Persian Lime No. 2 Villa Franca Lemon No. 3 Satsuma Orange
 No. 4 Tangerine No. 5 Kumquat No. 6 Mandarin

THE "KID GLOVE," OR MANDARIN FAMILY

We have in these a distinct group of citrus fruits, all showing their similarity by their general form, habits of growth, and their highly flavored, spicy, aromatic fruits with loosely adhering rind, which may easily be removed with the fingers, and the fruit eaten from the hand, in sections, with great ease. The earliest on this list is *Satsuma*, which ripens its fruit from October 1st to November 15th. This is also the hardiest variety of citrus known. Next in season is Mandarin, in November and December. Then comes Tangerine (Dancey) in December, January and February, and King in March and April. All do well on light or heavy soil, except King, which for commercial purposes, should only be planted on hammock or heavy soils on sour orange stock.

SATSUMA. (*Oonshiu Kii Seedless*).—Medium in size, flattened in shape, color yellow, somewhat inclined to color of Tangerine; rind and segments part freely; flesh fine grained, tender, juicy, sweet and delicious, entirely seedless, and one of the earliest varieties known; fruit always ripe in November and of good quality in early October. Tree thornless, of distinct habits, and very prolific; bears young, usually fruits when bud is one year old in nursery. Well adapted to all classes of soil. The most hardy of all edible citrus fruits, and we strongly recommend it for use on your dining table and for marketing purposes. This is a most valuable sort. On pine land, central and southern Florida, use lemon stock only.

MANDARIN.—Medium in size, flattened, deep yellow in color, skin very thin and of fine texture. Skin and segments loosely adherent, flesh rather dark orange in color, spicy, aromatic and rich in flavor. Tree vigorous, compact in growth, bears young and is very prolific. This variety is largely planted in Louisiana, and has always been a good one for Florida. Does well on all classes of soils where citrus fruits are grown, and we consider it a profitable variety. Not a dwarf.

KING.—Fruit very large and flattened and with loosely adhering rind and segments like all Mandarin varieties. Color orange red, skin

rough, but general appearance fine. Flesh juicy, meaty and most agreeable, highly aromatic flavor. Quality the very best. Tree strong, upright grower, foliage dark and rich. Season April, May and June. This variety succeeds best propagated on sour orange stock and planted on good quality hammock lands; however, it has borne well for us propagated on lemon stock and planted on high pine land; in fact, we might say that it has proven to be very prolific, and retains its good qualities long after ripening, even on lemon stock. Season late. King oranges have sold at such very high prices in the auction markets, that it has been exceedingly profitable to grow them. They are usually packed in half boxes and it is not unusual for them to sell for \$7.00 or \$8.00 a full box.

TANGERINE. (Dancey).—We believe we have the best Tangerine strain grown. It originated from Magnolia Grove, owned by F. D. Waite, at Belleview, Fla. Fruit large size, flat in shape, each segment well marked from the outside, skin smooth, deep red in color, of fine texture, nearly always entirely free from any effect from the attack of rust mite. The Tangerine is too well known to need more than a brief description. Skin separates freely from the flesh, juicy, aromatic and spicy in flavor. Quality excellent and no orchard complete without a good supply of this variety.

OCKLAWAHA NURSERIES

LATE VARIETIES

The records of all marketing agencies handling Florida citrus fruits have proven conclusively that Valencia Late oranges have averaged a higher price than any other late orange shipped out of this state in many years. In our own shipments of this variety, we have averaged as high as \$4.55 per box for an entire car shipped from our groves; and the general average of all shipments, made over several years, has been around \$3.00 per box. There has been no decrease in prices of Valencias, but rather a steady increase; and in the meantime the output

A Corner in Valencia Tree

Pedigree all through. This tree was one that was used to furnish the buds that went into your trees



Valencia
Late
Oranges

Uniform size,
bright and
glossy.
Quality fruit
from pedigreed
trees.
Season April
to July.

of Florida Valencias has been more than quadrupled during the past ten years.

The Florida Valencia is a prime favorite with all fruit dealers because of its splendid keeping qualities and for its unexcelled flavor and its general popularity among consumers. Therefore, this variety has, by its own merit, standardized itself in all markets of the United States and can never be produced in sufficient supply to fill the demand. The Valencia orange matures and ripens in April, May and June, when there is no other good citrus fruit to compete with it in the markets, and right then the shipper of Ocklawaha Nurseries pedigreed Valencias will get the biggest prices of the season. Always plant Valencias on land of good quality, on proper root stock, and you will get better results than with any other late variety.

In the meantime, do not overlook the King orange as a late type. It ripens in March and hangs on the tree as late as June first in good condition. Its best market value is in April and May.

VALENCIA LATE ORANGES.—Valencia Late oranges have gained local reputations in some localities as shy bearers. This condition does not apply naturally to this variety

any more than it does to Parson Brown, which also bears the same reputation. The fault is *not with the variety, but with the method generally practiced of budding from nursery*

OCKLAWAHA NURSERIES

stock, or untested, bearing trees, over a period of ten to twenty years.

Ocklawaha Nurseries Valencias are heavy bearers, and our records of young budwood trees show the Valencia almost as heavy a producer as the Pineapple orange, while in our older groves Valencias fourteen years old averaged 13 boxes per tree in 1916-17. Choice of budwood from fruit stems has proven a wonderful success in giving one type of fruit and the highest quantity of standard sizes and grades—off sizes and grades being but a small percentage of the crop where all trees were properly fertilized and sprayed. Light crop years do not seem to affect the size and grade of fruit produced, as we have removed four-fifths of the fruit in June from heavy bearing trees without lowering the grade or increasing the size of the remainder of the fruit left on the tree until regular picking season.

Our budwood trees have been bred up for budwood purposes from *fruit selection*, and our present stock in nursery is budded from stems of the finest fruit produced on these budwood trees. Our experiments of from six to ten years under this method have proven that this is an absolutely dependable method of producing heavy bearing trees, producing fine grades of thin-skinned, smooth, uniform fruit. The method of budding generally employed has been to get a "start" from trees "*true to name*," and thereafter to bud from nursery rows. As the Valencia has, under test, shown as high as five variations in budwood cut from one tree, this method must be classed as unreliable, and trees so produced will be generally unprofitable in your grove.

As the Valencia Late has shown itself as

being capable of producing so many variations from an individual tree, the necessity of budding from close selections of fruit stem wood is apparent, and this method of propagation is resorted to as far as it is possible to do so in Ocklawaha Nurseries propagation work. Where it is necessary to rebud any trees, these trees are rebudded from bearing trees, developed from individual fruit stem propagations, grafted into the root stock several years ago and brought into bearing, with the very finest uniformity and highest production. And while there will be slight variations in the fruit produced of any Valencia Late tree, we are sure that variations have been reduced to a minimum in Ocklawaha Nurseries propagation, and that we can assure the planter of this variety of a higher record of first quality fruit than can be obtained from any other trees of this variety propagated in the State of Florida. The Valencia Late has a late season of ripening, coming in when all other varieties are off the market, selling usually at very high prices throughout the entire country. The best prices obtain for the medium sized, highly colored fruit, and it is good quality of production that we are working strenuously for in Ocklawaha Nurseries trees. Valencias are not usually shipped to the markets until after the first of April; and from then on until the first of July is the season of their best quality, and that in which they bring the highest price.

We recommend planting this variety in generous quantities on all soils adapted to its production, reference to which will be found under the head of Soils on page 12.

NAVELS

The Florida nurseries took up the propagation of Navel oranges for California planting over 30 years ago, and for 12 or 15 years practically all the trees planted in California of this variety were propagated in the Florida nurseries. During this period of propagation it was certainly a rare thing for a single stick of budwood to be cut from a bearing tree and the nursery trimmings were resorted to altogether for this work. Professor Shamel, in his experimental work in California, has found that this variety has been capable of producing many variations; but long before he began his work so-called new varieties of Navels were established because of these variations in individual trees, in all probability shipped to California from the Florida nurseries. This proves a variation in the type, and Professor Shamel's investigations have proven that there is also variation in the bearing qualities of the trees, some of which produce heavy crops of fine fruit, while others, year after year, produce fruit in such small quantity and of such inferior quality as to make them of absolutely no profit to the grower.

Under the influence of superior propagation methods we have been able to select a few very fine trees of the Washington and Surprise Navels for budwood purposes, and we are now in a position to propagate for our customers Navel orange trees on either sour orange or rough lemon stock that we believe will give entirely satisfactory results in the way of producing commercial sizes and fancy grades of fruit, which will meet with a ready reception in the markets of the country at fancy prices.

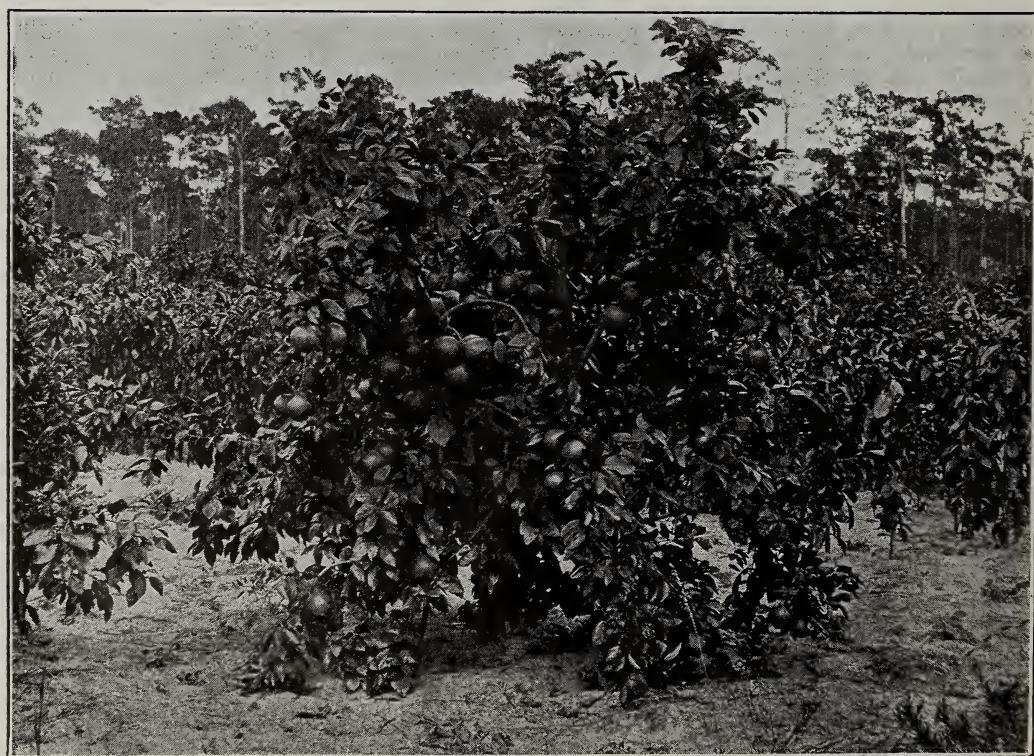
OCKLAWAH NURSERIES

In Florida the Navel orange matures about 60 days ahead of the full maturity of the California crop; hence the production of a good quality of Navel oranges will be found to be extremely profitable where proper soil conditions obtain. The land selected for this purpose should be among the grades ranging from best quality medium low pine soils to the very richest of hammock soils, underlaid with clay or marl, and the root stock used should be sour orange. In Southern Texas and Lower Louisiana the soil is all rich enough to produce the Navel orange to perfection, and our improved methods of propagation will certainly give the grower of this variety splendid success, and we recommend the Navel orange fully as above stated.

Orders for Navel orange trees should be placed in the months of November, December and January for planting the following fall, at which time budwood selections can be made from our bearing trees when the fruit is on the stem and the fruit stem wood be used exclusively.

WASHINGTON NAVEL.—Trees almost thornless, strong growers. In some soils they give best results on sour stock. Fruit medium to large, red-orange in color; skin thick, smooth and tough; seedless, flesh tender, juicy and sweet; flavor peculiarly its own, luscious and fine. Peculiarly marked at blossom end, where a small secondary orange, irregular in shape, is formed, imbedded within, sometimes protruding from the segments of the fruit. This is generally conceded to be one of the best navel varieties, and is one of the most prominent fruits in California today.

SURPRISE NAVEL.—Introduced by Mr. E. S. Hubbard. Fruit rounded in form, slightly oblate, size medium, packing 126 to 216 to the crate; heavy, juicy and of fine flavor, acidity and sweetness well blended. Skin thin and closely adhering; flavor rich and vinous, of excellent quality; seedless, flesh fine grained; yellow in color. Tree strong, vigorous grower, foliage dark green, bears young, and well on sour stock. We recommend this variety for general planting and believe it will prove to be the leading navel for Florida in the future.



The above is a three-year-old Conner Prolific Grapefruit



Conner Prolific Grapefruit—They all bear
Three-year buds, five-year stock. Light, sandy (white) soil, lemon stock

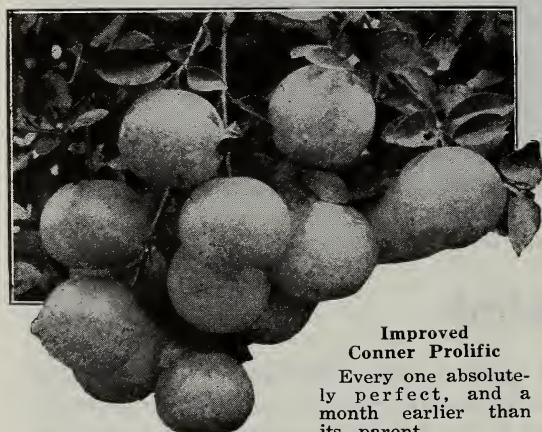
Grapefruit

Florida has given to the rest of the world many additions to their regular "daily bread," but nothing that compares favorably with her splendid grapefruit. There has never been a new fruit introduced to the American people that so quickly became a popular article of food, hence, the wonderful demand for Florida grapefruit, and the inability of the Florida groves to ever fill that demand. There never can be an overproduction of this splendid fruit, because its popularity grows too fast, and under the influence of wide distribution over the markets of the country, and its introduction annually to thousands of new consumers, through our wonderful sales agencies, new markets are being created to consume this wonderful product faster than it will ever be produced. Grapefruit, like other types of citrus fruits, has its variations, as to quality and season of ripening; and, of course, is subject to the same rule of supply and demand in fixing value. Early in the shipping season when the supply of fine ripe fruit is limited, and the markets bare, all offerings of *ripe* grapefruit are always taken at the highest prices of the season; and our work has been along the line of developing the very earliest variety possible in order that planters of Ocklawaha Nurseries trees might get the full benefit of all high prices possible to obtain.

IMPROVED CONNER PROLIFIC GRAPEFRUIT is our earliest type, and next to that is straight Conner Prolific variety. They are both making good money for us and our trees for this season are budded from the finest specimens, and the earliest of last year's extra fine crops, and from fruit stem budwood.

You will note that with this issue of our catalog we have cut out absolutely the Bowen grapefruit, which is an inferior type to the Conner Prolific, and which offered no advantage to the planter that the Conner Prolific did not fulfill. We have also cut out the Walters, Florida Standard and Duncan grapefruit, all of which, brought into fruiting on our place, have proven themselves inferior to the varieties described in this catalog. You must decide that it would be to our advantage to propagate and recommend any variety of grapefruit that under our test

had proven that it would give to our customers the greatest amount of satisfaction. If we had found that the types above mentioned would give the same proper ripening season, the quality and quantity of fruit and general characteristics that the varieties we have catalogued do, we would certainly have propagated them for you and offered them to you with our full endorsement, and in the years to come we would have been benefited by your planting them under our recommendation to just the same extent that we expect to be benefited by your planting and bringing into bearing the varieties that we have, by so much painstaking care and expense, developed, with their peculiarly better characteristics. Remember that our propagations of grapefruit are all from pedigreed trees and fruit selections.



**Improved
Conner Prolific**
Every one absolute-
ly perfect, and a
month earlier than
its parent.

THE EARLIEST OF ALL GRAPE- FRUIT

IMPROVED CONNER PROLIFIC GRAPEFRUIT.—(Please note special prices on Page 57.) This variety has been endorsed as the earliest, finest quality and best producer of any grapefruit that has come under their observation by hundreds of Florida growers. Most of the trees we have offered of this variety have been purchased by growers of long experience. This is the only variety that may be depended upon to ripen its fruit during the months of September and October, and have it not only well colored, but possessing all the maturity and flavor that the midseason varieties will show in January and February. Improved Conner Prolific Grapefruit is a sport from the straight Conner Prolific variety. It was budded into two trees in our Lake Carleton grove seven years ago, and has been bearing every year since two years old. And every year the quantity of fruit produced has increased, notwithstanding the fact that these trees have been heavily cut for budwood during that time. Every precaution has been taken to prove beyond any question of doubt that a specific type of early fruit has been developed in this new variety. Eighteen propagations in old stocks have been made in different parts of our grove on every variety of soil in order to eliminate the possibility that the early development of these two trees,

which stand close together, was due to the influence of a soil pocket, or other causes. These test propagations have proven the fact that this is a distinct early type, as many of the propagations made have produced a slightly earlier and even a finer type of fruit than the original trees produced; but it is significant that not one of these trees has produced a later ripening type nor a type any lower in quality than the original tree. The original trees have been under test in bearing for five years, and in December, 1916, the writer took specimens of this fruit to Vero, where they were tested in competition with the cream of the Indian river product by people who got together for the purpose of making this test, and the Improved Conner Prolific Grapefruit was pronounced superior in every way to the fruit with which it was brought into competition. Among those present were Mr. J. S. Crutchfield, of Crutchfield & Woolfolk Fruit Company; Mr. W. E. Sexton, of Vero, Fla.; Dr. K. L. Storm, of Perkasie, Pa., and Mr. Herman S. Davis, of Pittsburgh, Pa., all of whom agreed fully with the above statements.

We are planning now to substitute this variety for the straight Conner Prolific, and as we bring a sufficient number of trees into bearing for that purpose all propagations made after the next three or four years will be made from this extra early and extra fine type of grapefruit. This variety begins to color early in September, and by the last of September is generally fully colored, of full size and maturity. The fruit if left on the tree will hold its fine condition until the early summer, and every year a number of specimens have been left on the original tree, which remained there in good condition until the next crop of fruit began to ripen. The exceptional value of this new type lies in the fact that it is extra early, of extremely handsome appearance, of fine color, of the proper size, and can be shipped at a time when the markets are bare of grapefruit, and sold at the highest price that will obtain through any season in which grapefruit is marketed.

We recommend the planting of this variety over any other type, for planters may depend upon getting a wonderful income from their trees when they come into bearing. This va-

ACCOUNT SALES
HIGHLAND CITRUS SUB-EXCHANGE
TAVARES, FLORIDA

Sale at Detroit, Michigan.....Agency Date sold.....October 28th, 1916.
 For Mt. Dora Citrus Growers.....Ass'n Remitted.....November 10th, 1916.

F.C.E. No. 66...Sub-Ex. No. 3.....Ass'n No. 1.....Sold to C.F. Smith Co. (A. Jacob Brok)
 Car No 29460....Initial. FCE.....Date of arrival 11/3/16.....10:20 A.M. Detroit.

NO. BOXES	BRAND	VARIETY	PRICE	AMOUNT	REMARKS
243	Lake Dora	Grapefruit.	4.75	1154 25	Remitted.
57	LaPaloma	"	4.75	270 75	11/10/16.
				1425 00	Number 48.
					Drawn by FCE.
					Brawn on Mer. Natl.
					Favor of FCE.
					Paid E/B- follows.
					Did not inspect.
					H.C. MacClaren,
					District Mgr
FREIGHT CHARGES			GROSS	1425 00	
Freight charges			204.00		
				204 00	
EXCHANGE CHARGES			NET	1221 00	
Less retained F.C.E. @ 11 $\frac{1}{2}$ per box			33.00		
Less retained Sub-Ex. @ 1 $\frac{1}{4}$ "			3.75		
Less advertising @					
				36 75	
Check attached to balance				1184 25	By M.E. Miller, Sub-Exch. Manager
Less Retain for Demurrage at Detroit, as per letter attached...				2.00	
				\$1182.25	

CERTIFIED COPY ACCOUNT- SALE CONNER PROLIFIC GRAPEFRUIT

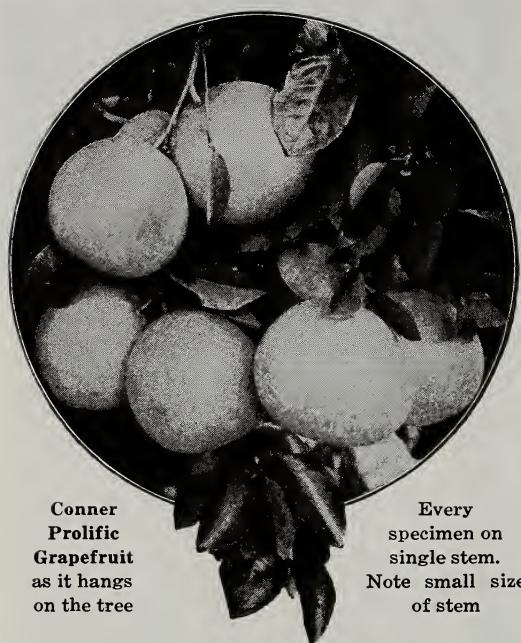
The above account sales is for one carload of 300 boxes of Conner Prolific grapefruit, picked from the trees and sold October 28, 1916. You will note that 243 boxes of this shipment were first grade and 57 boxes were second, and that the average price obtained for this car was \$3.94 per box, f. o. b. Two hundred and ninety boxes of this shipment were standard sizes, which means that this car represented 97% standard size and 100% choice to fancy fruit, which represents the fruit exactly as gathered from the tree and placed in the car. No culls of any kind, no claim made for off grade, off color or off condition. Compare the prices and conditions in this car with hundreds of other cars of midseason to late grapefruit put out of this state from one to four or five months later, and you will find that this car of fruit brought more than \$2.00 per box over what such midseason to late shipments brought the grower.

MORAL: Plant Conner Prolific early grape fruit and get more money from your grove than you would obtain by planting anything else under the sun. Plant Conner Prolific early grapefruit and make your shipments the earliest of the season.

OCKLAWAHA NURSERIES

riety has shown itself capable of being a repeater, and unlike other types of grapefruit will not have its off years of fruiting. The original trees have borne a moderately heavy crop each of the five years we have had them under test, and the trees have remained in a strong, healthy, vigorous condition and have not been impoverished by the heavy crops produced.

As the accompanying cuts will show, Improved Conner Prolific Grapefruit is of finer texture of peel, better shape, and more uniform in size than the old type.



A STANDARD EARLY TYPE

CONNER PROLIFIC GRAPEFRUIT.—

This variety has been propagated from bearing trees only, by ourselves since 1900. It is a sport of early fruit from the old Bowen variety and is not a hybrid, but a true Florida grapefruit in every particular. In its regular shipping season from October 15th to November 15th, the fruit will run from 46 to 80 to the crate, while a majority of the fruit will run in 54 and 64 sizes, the most desirable sizes for market purposes. For our propagation work this year we removed from the trees several thousand fruit specimens of the most uniform size, and the earliest ripening season, and stems of this variety were used to propagate the trees we offer you in this catalog. Such a method of bud selection will be certain to secure the most uniform fruit production and the most uniform quality of fruit, which will ripen on the trees at the proper early season to insure heavy shipments when market values are high.

In comparison with Walters grapefruit in the markets of the country, we have found the Conner Prolific far superior in every way, relating to size, smoothness of peel, brightness, color, and maturity of juice contents; and most important of all, we have realized a price of from \$1.00 to \$2.00 more per box than the Walters grapefruit sold for on the same market during the same week that Conner Prolific was sold in that market. Conner Prolific grapefruit has an extremely wide range as to season; and while it may be shipped first of the early shipments leaving the state, it may be held on the tree and shipped with the latest types and in better condition than generally rules fruit shipped late in the season. The seeds of this fruit lie close and compact in the core, do not penetrate into the meat, therefore, are little influenced by the moisture in the fruit to the extent of causing them to sprout. It is very seldom indeed that a sprouted seed is found in Conner Prolific grapefruit and never one found where the tree is budded on sour orange stock.

This variety is a beautiful silvery yellow in color, nearly always bright, has a smooth, glossy peel, and few, if any, depressions over the large glands; well rounded, but generally slightly flattened in shape. The tree grows very rapidly and quickly spreads out, giving an immense bearing surface, which is usually well filled with fruit. The fruit is well distributed over the tree, and is seldom borne more than one on a stem, being distinct in that respect. Grapefruit bearing in clusters hanging close together usually leave marks where the fruits touch and form a harbor for scale insects, where spraying effectively would be impossible. This variety is practically immune from the attack of lemon scab, and this is especially true where the trees are budded on sour orange stock. We recommend every planter of a grapefruit grove to plant the Conner Prolific for his early mid-season to late shipments. This variety is ripe early enough to ship during October and November, and will hang on the trees until June or July, and comes nearer to being a year-round grapefruit than any other type.

MARSH SEEDLESS GRAPEFRUIT.—

The trees we offer you of this variety have been budded from fruit selections, and the result of planting these trees should be to produce for you a fruit that will run 54, 64, 70 and 80 to the box. These sizes are the most desirable for market purposes at the time the Marsh Seedless is ready to go to the market in March and April. The selections of budwood we have made have been for the purpose of producing a fruit flattened in shape, nearly seedless, heavy in juice, and of good, slightly sub-acid flavor; with smooth, thin skin, and of good color. This is generally a prolific variety, bearing moderately heavy crops every year, whose chief attraction is its seedless

OCKLAWAHA NURSERIES

fruit, and medium to small sizes and medium lateness of season, all of which combine to make a fruit that will bring a good price in the markets. It should be planted for commercial purposes generally for shipments to be made late in the season. Our propagation work with this variety has been very carefully done, and the selections of budwood have been

made from nothing but proven, bearing trees and type of fruit.

We specially recommend that Texas planters who have been planting California trees budded from performance record trees use Ocklawaha Nurseries propagations of this variety, as the result can only be the best in comparison when the trees commence to bear.

Tangelo

This is a comparatively new variety of citrus fruit, being a combination of the Tangerine orange and the pomelo or grapefruit, as the name indicates. The fruit is slightly larger than a sweet orange, with peel of the reddish tinge of the Tangerine, and the sprightly sub-acid fruit juice of the grapefruit and tangerine, combined with the pleasant flavor of both. The Tangelo is one of the hardy hybrids sent out by the United States government a few years ago, and has won a place among citrus fruits by its appeal to many consumers who wanted "something different." Of the many types developed, the Sampson Tangelo is conceded to be the best, and is fast making its place in the market at a very high price. Every grove should contain trees of the Tangelo, as it is destined to become one of the most profitable fruits grown. It is more hardy than either the orange or grapefruit, grows rapidly and bears heavy crops of fine fruit two to three years after planting.

Shaddocks

Tree grows to immense size. Form similar to grapefruit. The fruit very large in size, skin thick, great number of seeds, pulp rose colored to pink. Flavor similar to that of grapefruit, but less of the bitter. The shaddocks are of no commercial importance, nor are they desirable except as ornamental fruits, for which they are remarkable for their size and beauty. Price \$2.00 each.

Lemons

Special methods of cultivation, pruning and curing are necessary in the production of lemons for marketing purposes. There are large areas of land in Florida well adapted to the production of lemons, but unless they are properly looked after in every detail, they are best left alone. However, no home grove is complete without at least two lemon trees, and those offered below are the best we know of for this climate.

EVERBEARING.—Fruit large, pointed at both ends, skin thick and not smooth. Fruit of fine flavor and the best for house use. Trees do not grow very large, heads low like a Citron, bears every month in the year, and there is never a time when fruit cannot be gathered. Everybody should have one or two trees.

VILLA FRANCA.—Fruit medium size, rind smooth, thin and sweet. A very juicy, acid fruit of fine appearance. This has long been a leading variety, and we consider it the best either for general planting or home use.

PONDEROSA.—Extremely large, fruit weighs from 20 to 36 oz. Very juicy, acid strong and of excellent flavor; genuine lemon taste. Rind thin for such large fruits. Tree



Villa Franca Lemons

good grower and bears very young and heavily. Quite unique and valuable.

OCKLAWAH NURSERIES

TO CURE LEMONS FOR HOME USE

Clip 100 matured lemons from tree, get a half barrel of perfectly dry sawdust and place a layer two inches thick of sawdust in bottom of barrel, then place a layer of lemons on this so they will not touch outside of barrel and so they will not touch each other. Cover this with a layer of sawdust two inches deep, then place another layer of lemons and sawdust until all are placed. In a short time all will cure and color well and be far superior to imported lemons and at practically no cost. Try it.

Limes

The production of limes is now one of Florida's best paying industries. For many years the only limes obtained here have come from the keys along the southern coast, but the demand is so great at such good prices that commercial groves have been planted, whose future is already assured. During the last few years limes have sold in Southern markets at \$10.00 to \$15.00 per barrel, and there has not at any time been enough fruit in supply to meet half the demand. In the propagation of limes we have gone about it in a way that will positively be an advantage to our customers. Instead of growing them from seedlings, as is usually done in most nurseries, we have budded from the trees producing the largest and best fruit, into the rough lemon stock, the Mexican and Seedless Persian varieties, and our trees at two years old will produce from 200 to 500 limes of good size and the very best quality. Limes grow fast, and to large size trees very quickly, and at five or six years old will produce a barrel to the tree. The proper distance to plant is 18 x 25 feet.

SEEDLESS PERSIAN.—Tree vigorous, strong, upright grower, few thorns, beautiful foliage, of light green color. Fruit $2\frac{1}{2}$ inches long and 2 inches diameter; thin skin, no seeds, abundance of juice; finest flavor, and valuable for home use from June till January. Fine fruit for market.

COMMON FLORIDA. (Mexican).—The fruit mostly used for market purposes. Trees grow large in size, are very prolific,

commencing to bear second year. Fruit nearly round, bright yellow in color, very acid, of a distinct flavor. Heavy and juicy. All our trees are either budded or grafted from bearing trees.

TAHITI. (Seedless).—Medium to large in size, oblong, bright lemon yellow color, fine aroma, and delicious flavor—heavy bearing, vigorous, beautifully shaped trees, similar to Persian.



OCKLAWAHA NURSERIES

Kumquats

Propagated only on rough lemon and trifoliata stocks.

This fruit is becoming more popular each year, and as a commercial product is attracting a great deal of attention in Eastern and Northern markets, the prices obtained being such as to warrant its being planted in large quantities. Aside from its commercial value, it is highly ornamental, and as a lawn or border plant its beauty is remarkable. We have Kumquat trees in all sizes from small one year, up to four year buds fruiting heavily.

NAGAMI (oblong).—Size of fruit about one and one-half inches long by about three-fourths inch in diameter, deep orange yellow in color, peel delicate in flavor, sweet and aromatic, and flesh agreeably acid. Trees grow in shrub form, low, compact heads, leaves wavy, branches slender and entirely thornless. A most ornamental tree when loaded with fruit, as they always are, at two years from the bud. We recommend this tree for general planting on a small scale and particularly for yard decoration. The fruit makes a delicious marmalade and is splendid to eat from the hand. Does not require peeling, as the rind is a part of the fruit.

MARUMI (round).—Similar in every way to the Nagami only that it has a few thorns and is round in shape, about one inch in diameter. The round is not so desirable as the oblong and we advise the use of the oblong variety.



Nagami Kumquat

A USUAL EXPERIENCE WITH OCKLAWAHA NURSERIES TREES

Ocklawaha Nurseries, Lake Gem, Fla.

DeLand, Fla., July 1, 1916.

Dear Sirs: The 300 Valencia trees which you shipped me recently arrived in excellent shape and are very fine indeed.

This is the first time in several years that I have ordered anything without first having seen it, when I have not been disappointed.

Yours truly,
J. A. SCARLETT.

A SATISFIED CUSTOMER

Ocklawaha Nurseries, Lake Gem, Fla.

Wickensburg, Ariz., June 30, 1915.

Gentlemen: I am pleased to report that of the 443 trees purchased of you last winter and set at Kathleen, Fla., every one is growing. The man I have in charge reports that not one is dead. These were mostly Ruby, on sour stock, planted on high rolling, light pine land.

Yours truly,
W. E. TUCKER.

ABOVE GRADE REPRESENTED A FREQUENT OCCURRENCE

Mr. O. W. Conner, Lake Gem, Fla.

Dear Sir: Enclosed please find check for \$400.00, being amount of your bill for trees as per invoice of December 15th. I never paid a bill with any more satisfaction than this one. Your trees are better than represented.

Yours very truly,
WM. EDWARDS, Superintendent.

Jas. Laughlin, Jr.'s
Sydonie Grove, Zellwood, Fla.,

Jan. 2, 1915.



OCKLAWAHA NURSERIES

Are Our Prices Higher Than Value Given?

PLEASE READ CAREFULLY

**YOU ALWAYS PAY FOR
WHAT YOU GET
ACCORDING TO VALUE** Many customers have told us that our prices are higher than those asked by other nurseries for trees described as ours are, size for size, age for age and grade for grade. This is likely enough

true, because the most of the nurseries of the state where budding is not considered the prime factor in creating the fruitful, profitable tree for the grove planter to use, and where selection of budwood has been for the sole purpose of getting bud sticks large enough to be budded into the young stock without difficulty and affording eyes that would start off readily and grow rapidly, a larger percentage of both 5-7 and 4-5 foot trees are possible to produce from the same number of stock budded than it is possible to produce where bud selection is practiced and small fruit stem wood is used, as is the case in our propagation work. The large, robust eyes cut from nursery stock or without selection from fruit stems, as above stated, start out quickly after budding, making a rank, luxuriant growth, and in a short time are at the top of the stakes and branching and the foundation is laid for the tree without character very quickly.

FRUIT STEMS FOR BUDWOOD USED

In the use of our fruit stem budwood the buds are small, and instead of a budder putting in 1500 to 2000 buds per day our budders are fortunate if they get from 350 to 500 buds in a day's work. The percentage of loss in our small buds is greater, making the expense of budding cost fully five times as much as budding from unselected budwood. When our fruit stem buds make their first growth, instead of growing 2 or 3 feet with the first flow of sap, they grow from 3 to 6 or 8 inches. The second growth on buds of this kind is anywhere from 6 to 18 inches, but it requires fully two months to get the same growth on buds of this kind that can be procured from unselected budwood in six weeks' time. After this first growth is obtained the progress of the tree is rapid, but the loss of time sustained in getting them started is responsible for a considerable difference in grade. The percentage of 5-7 foot trees produced is less, and the percentage of 4-5 foot trees is less, while the percentage of 3-4 foot trees is larger, which makes necessary raising the price of all grades in order to get the same amount of profit from Ocklawaha Nurseries trees that is derived from trees grown in the ordinary way and sold at from 10c to 25c per tree less.

WHY IT COSTS MORE TO GROW PEDIGREED TREES

The expense is greater in every way, because in training and pruning it is necessary to do four or five times as much work at four or five times as much expense all the way through the operation of budding, tying to stakes, pruning, etc., than is necessary to bring the unselected bud to a marketable size and development. But when you get an Ocklawaha Nursery tree you get a tree whose budwood has been chosen from the parent tree, with the same degree of care that the breeder of a high grade milch cow, or other stock, would apply to his dairy herd. And our trees are just as sure to give satisfactory results with this breeding applied as the milch cow produced from careful breeding will give to the dairy.

Do not overlook the significant fact that fruit growers all over the United States, who have been purchasing nursery stock for the purpose of producing apples, peaches, pears or fruits of any kind, have always found a large number of

OCKLAWAHA NURSERIES

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the trees they have planted that simply would not bear fruit true to the type for which they have planted them, nor did anything like the full number of trees planted give satisfactory bearing results when the trees were old enough to come into bearing, and that it has always been necessary to rebud or regraft these deciduous fruit trees in order to obtain a satisfactory orchard.

HOW OCKLAWAHA NURSERY TREES COST YOU LESS AND EARN MORE

Neither must we overlook the fact that in the groves of California and Florida, which have already been planted long enough to come into bearing, the growers are finding it necessary to rebud their trees by the hundreds in order to

weed out the non-bearing trees or the trees producing unsatisfactory fruit. And this work is necessary at the present time after all the expenses have been met by the grower to bring the trees to a bearing stage, at which time they should be absolutely satisfactory to the extent of fully 85% of all trees planted.

Ocklawaha Nurseries trees may cost you a few cents more per tree *now*—perhaps \$10.00 to \$25.00 per acre more—but this item of additional expense is not worth considering when you know that practically every tree planted will come into bearing, producing full, heavy crops of fruit equal in quality to the capable manner in which you have cultivated the trees and to the extent that your soil is suitable for getting such results.

The trees that you may select from the list we offer you were budded from trees that last season produced as follows:

THE RECORD BEHIND OUR PEDIGREED TREES

Pineapple oranges, 7 years old, 700 boxes to the acre.

Valencia oranges, 6 years old, 440 boxes to the acre.

Valencia oranges, 14 years old, 1300 boxes to the acre.

Conner Prolific Grapefruit, 7 years old, 800 boxes to the acre.

Conner Prolific Grapefruit, 14 years old, 1800 boxes to the acre.

Marsh Seedless Grapefruit, 7 years old, 600 boxes to the acre.

The number of
trees per acre in
each grove plot re-
ferred to in this
paragraph was
from 100 to 108.

HOW BUDWOOD IS SELECTED FOR FIRST CLASS TREES

Furthermore, all specific types like those named above were budded from fruit selections, made when the fruit was ripe on the trees, and with a view to obtaining the best and most uniform re-

sults as to quality of fruit and time of ripening for every variety selected, and the parent trees have been under observation since they were planted from the best propagation work possible to practice at that time over a period of from five to twelve years. So when you buy an Ocklawaha Nursery tree you buy a tree that is first-class, and please remember that "**NO TREE IS A FIRST-CLASS TREE UNLESS BUDDED FROM A BEARING TREE OF A KNOWN QUANTITY AND QUALITY OF PRODUCTION.**"—O. W. Conner.

CALIPER GRADING We do not guarantee in all varieties caliper grading. Neither do we invite comparison as to size with other trees. In many lines of the more robust growers our trees are equal to or even larger in caliper grading than trees offered by other nurseries under the same description. We obligate ourselves to bud your trees in the best possible manner and to deliver you under your order a tree that is fully equal to the grade your order specifies. If definite information is required as to the height and caliper

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of any particular variety of tree we will furnish it upon your request to do so. Generally the caliper grading of our trees is as follows:

1-Year Buds	2-Year Buds
3-4 feet, $\frac{1}{2}$ inch	3-4 feet, $\frac{5}{8}$ inch
4-5 feet, $\frac{5}{8}$ inch	4-5 feet, $\frac{3}{4}$ inch
5-7 feet, $\frac{3}{4}$ inch	5-7 feet, 1 inch

The caliper may vary from slightly under to slightly over the above specifications.

AGE OF TREES The term "one-year bud" is generally used to describe a tree that has been budded in the fall and banked up and held dormant until the spring growth season, which generally starts about March first, or which has been budded during the months of January, February, March and April, and grown until planting season in October and November. As all nurseries must follow this method, the age of all trees offered under all price lists of nurseries is uniform when described as one-year buds.

DECEPTIVE DESCRIPTIONS MISLEADING When you find a tree described as a 15 or 16 months old bud, whose age dates from the time the bud was placed in the stock, and which bud has been held over through the dormant season and started in the spring, such description may be considered as misleading, because it does not describe the true age of the bud nor the true length of time it has been growing. If a bud has been inserted in the stock in October or November and the stock has not been cut away and the bud started to grow until the following March, then the age of that bud starts from the time it began to develop and not from the time the bud was inserted, and a tree that is generally described as a one-year-old bud is usually only eight or nine months actual growth.

After a tree has made its first year's growth and enters its second year's growth, it is always termed by ourselves and others as a two-year bud until the second year's growth is completed, when it passes into the three-year class, and so on, until removed from the nursery. The age of the root at budding time is generally 3 or 4 years, so that a one-year bud may be generally described as being budded on a 4 or 5-year-old root, the age of the root to apply, of course, at digging and planting time.

Pruning before shipment must be left to our judgment, as the root system and top growth must be equal. When a tree is dug from the nursery over three-fourths of the roots are left in the ground and the top must be cut to correspond. We are branching all our trees at about twenty inches high, and generally short branches will be left on the tops from which the tree can be grown after planting.

DISCOUNTS No discounts other than those represented for trees in 1000 lots will be applied to any order, and no agent of the Ocklawaha Nurseries is authorized to offer any discount to any customer. The prices at which Ocklawaha Nurseries trees are offered are as low as our trees can be grown under proper methods of culture, fertilizing, bud selection, labor and general supervision. The tree that is offered at a lower price and for which is claimed the same good points that Ocklawaha Nurseries trees possess, may or may not have these good points. Consider well the advantages offered you by our sure method of propagation before you decide to buy a lower priced tree than we offer. Do not let 10 or 15 cents per tree additional cost stand in the way of your possessing a perfect grove producing perfect fruit of each variety you plant. We may charge you a little more for trees, but not half as much as they are worth from that standpoint to you. All prices are for trees f. o. b. our shipping point.

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There is no economy in planting smaller trees than shown on our list. A 1 to 2 or 2 to 3 ft. tree is too immature, or maybe a cull, and is never first class.

Always specify root stock desired when ordering trees.

Conner Prolific and Marsh Seedless Grapefruit, Tangelos, Lemons, Limes, Tangerines, Kings, Shaddocks, Mandarins, Satsumas, and all varieties of Oranges.

All varieties on our list are budded and can generally be furnished on sour orange or rough lemon root stock, and many varieties may also be furnished on grapefruit stock.

ONE-YEAR BUDS.

	Each	10	100	1,000
3 to 4 ft., medium size, 4-yr. root.....	\$.75	\$ 7.00	\$ 60.00	\$ 500.00
4 to 5 ft., standard size, 4-yr. root.....	1.00	9.00	80.00	750.00
5 to 7 ft., large size, 4-yr. root.....	1.80	12.50	110.00	1,000.00

TWO-YEAR BUDS.

	Each	10	100	1,000
3 to 4 ft., medium size, 5-yr. roots.....	\$ 1.00	\$ 9.00	\$ 85.00	\$ 800.00
4 to 5 ft., large size, 5-yr. roots.....	1.80	13.50	125.00	1,100.00
5 to 7 ft., extra large size, 5-yr. roots.....	2.50	20.00	175.00	1,500.00

THREE-YEAR BUDS.

	Each	10	100	1,000
These are generally, at fruiting stage, heavily branched at 2 ft. high, and have heavy caliper measurement, often running 2 inches in standard varieties and down to 1 1/4 inches for such varieties as Tangerines, Kings and Mandarins	\$ 3.50	\$ 30.00	\$ 250.00	\$ 2,000.00

IMPROVED CONNER PROLIFIC GRAPEFRUIT

ONE-YEAR BUDS.

	Each	10	100	1,000
3 to 4 ft.....	\$ 1.35	\$ 12.00	\$ 100.00	\$ 850.00
4 to 5 ft.....	1.75	15.00	125.00	1,000.00
5 to 7 ft.....	2.50	20.00	175.00	1,500.00

TWO-YEAR BUDS.

	Each	10	100	1,000
4 to 5 ft.....	\$ 2.50	\$ 20.00	\$ 175.00	\$ 1,500.00
5 to 7 ft.....	3.00	27.50	225.00	2,000.00

FOUR AND FIVE YEAR BUDS.

We always have several hundred of these on hand in extra large fruiting trees for yard planting where a bearing tree is wanted quickly. Prices on application. Always state number desired and variety, first and second choice.

KUMQUATS

Budded on lemon and trifoliata stock only.

ONE-YEAR BRANCHED.

	Each	10	100
1 to 2 feet.....	\$.50	\$ 4.50	
2 to 3 feet.....	.75	6.00	
3 to 4 feet.....	1.00	8.50	
4 to 5 feet.....	1.25	10.00	

TWO-YEAR BRANCHED.

	Each	10	100
2 to 3 feet.....	\$ 1.00	\$ 9.00	
3 to 4 feet.....	1.35	12.50	

SEEDLINGS

No 1 or 2 year stock offered, but we offer, not to the trade, but to our customers, Grapefruit, and Sour Orange Seedlings at following prices:

	Each	10	100
3 yrs. old, 4 or 5 ft., 1 to 1 1/4 inch caliper.....	\$.50	\$ 4.00	\$ 35.00
4 yrs. old, 5 to 6 ft., 1 1/4 to 1 1/2 inch caliper.....	.60	5.00	45.00
5 yrs. old, 7 to 8 ft., 1 1/2 to 2 inch caliper.....	1.00	8.00	75.00



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BUDWOOD AND SCIONS

During the last ten years we have directed our attention so wholly to improvement of types of various varieties of citrus fruits that budwood obtained from our establishment may be relied upon to give excellent satisfaction in every way when used for the purpose of improving varieties or types of citrus trees that are not giving satisfaction to the grower. This budwood will also be found extremely satisfactory for the budding of small blocks of nursery stock that the planter is growing for his own use, and for such purposes we will furnish it to our customers. **But in no case will we furnish budwood to nurserymen who are growing trees for commercial purposes.** We offer you budwood of all standard varieties that we have described in this catalog, from only one source, that is, from bearing, pedigreed trees, at the following prices:

(No less than 10 buds will be furnished of any one variety.)

Per 10.....	\$ 1.00
Per 50.....	4.50
Per 100.....	6.50
Per 500.....	27.50
Per 1,000.....	50.00

Terms and Methods of Business

OCKLAWAHA NURSERIES are located in the western end of Orange County and the eastern end of Lake County, (the county line running through the middle of our plant) on the Seaboard Air Line Railway, our shipments being made from Victoria station. Our post office is Lake Gem. We have the Bell telephone direct to our plant. Customers in any part of Florida who have connections with the Bell system can reach us at any time at a small charge—call Victoria through any exchange. Telegrams may be sent either to Mt. Dora or Zellwood to be telephoned direct to our office at Victoria.

PACKING No better work is done in the state along this line than we do in our large, up-to-date packing house. Trees packed in full size cases may always be expected to arrive at destination in good order and to remain moist for a month after packing.

DO WE GUARANTEE TREES TO LIVE? As mentioned elsewhere in this catalog, we use every precaution to weed out every undesirable tree that is dug from the Ocklawaha Nurseries with which to fill any order received. Our trees go through two inspections for this purpose, and it would seem impossible that an inferior tree would get by such inspection. If you take proper care of our trees when they arrive; do not permit them to dry out; see to it yourself that all trees are properly handled as live plants which are subject to injury by wind, heat or cold; plant them as directed in this catalog; give them the proper amount of water; cultivate them as directed; you should not lose a tree. And unless a complaint is filed with us immediately after your trees are received no allowance will be made for a claim for replacements of dead trees at any time thereafter. In case you find a tree in your shipment that you consider inferior, call our attention to it at the time the trees are received, plant it at a place where you can watch it, and if it fails to grow notify us later on and a new tree will be furnished in its place. Unless the matter is handled in this way by you do not expect us to refurbish on any claim that you may file thereafter.



OCKLAWAHA NURSERIES

GUARANTEE A guarantee of the quality of a nursery tree amounts to absolutely nothing where the integrity of the firm giving such guarantee is not above reproach, and if a customer who has planted trees that have not proven satisfactory to him should apply for redress the courts would, in all probability, consider that it was possible for an error to occur, that malicious representation had not been made, and that the nurseryman giving such a guarantee could only be held responsible to the extent of the amount involved at the time the trees were purchased. A money-back guarantee is, therefore, of little value.

We have offered you elsewhere in this catalog a choice of trees, or, in fact, a choice of fruit selection, from our bearing trees from which your trees might be budded. Whether you accept this offer or not, the propagation work that we do for you in propagating every Ocklawaha Nurseries tree will be carried out faithfully, and the tree that we will deliver to you will represent as nearly as possible to make it what has been your intent to purchase, and we guarantee that all trees budded in the Ocklawaha Nurseries stock will either be budded by your selection or will be budded by our selection, according to the description of this kind of work shown in this catalog, and that only work of this kind will be applied to any tree you may purchase from us. Only two men employed in Ocklawaha Nurseries service are ever permitted to select a bud that goes into your trees. One of these is O. W. Conner, owner and proprietor, and the other is T. C. Caldwell, manager.

OUR RESPONSIBILITY We cannot be responsible for your mistakes in planting. We do not know what treatment our trees may receive at your or your laborers' hands. Therefore when your trees reach you in good condition our responsibility ends. If your order is small and is packed in bales and subjected to a long delay in transit, claim for loss or damage should be made against transportation companies. If any loss occurs we will aid you in making recoveries from transportation companies. Be sure always to retain your bill of lading and to get proper statement from your agent as to your loss, showing date of receipt. You can then order more trees with full confidence that you will be reimbursed for your loss. We will always make good any trees arriving in bad order provided there is no delay in transit, and if reported immediately upon receipt of goods.

SUBSTITUTIONS Substitutions as to variety or root stocks are never made without consulting our customer, or unless specified by him. Substitutions by size are rarely resorted to, and never in a case where it will mean an additional cost of \$40.00 or \$50.00 over that originally involved in the order. Substitution is sometimes resorted to by us where only a few trees are ordered of one kind, with a general order for a larger number of trees, and where the size specified cannot be filled, and which would mean more to a customer than the difference involved to have his list complete. It is then made to facilitate shipping and quick service, but not otherwise.

We absolutely do not, under any conditions, offer our customers any trees except those grown absolutely within our own nurseries and budded from our pedigree trees. Any representations to the contrary may be considered as malicious misstatements and false in every detail.

TERMS New customers should remit for their trees in full when order is sent, if immediate shipment is desired. This will save time, as we must investigate your credit before we ship your goods on open account.



OCKLAWAHA NURSERIES

FREIGHT PREPAYMENT Customers must prepay freight on all shipments outside the State of Florida. We can figure the weights and freight rates on a bill of trees where our customer gives the number desired and asks us for such information. Approximately, however, this cost is, on orders of \$50.00, 20%, and on orders of \$100.00 and over, 15%. We will not accept orders for foreign shipment for a less amount than \$50.00.

PREPAY STATIONS For convenience, our customers often ask us to make shipments to prepay stations. We wish to state here that we will not be responsible for safe delivery of any shipment so made. In our opinion it will pay in practically every case for purchasers to have their shipments made direct to a station where the services of an agent may be had and forwarded local from that point, rather than to take chances of loss or damage.

EXPRESS SHIPMENTS This is always advisable on small packages. While the rate is 100% more than freight charges you will often save four times as much by paying it. Long distance shipments in hot weather should always go by express. We will not be responsible for safe delivery of any stock shipped out of the regular season (November first to March first), unless the shipment is made by express. Local agencies can furnish rates, or we will do so on application.

PARCEL POST Certainly a very undesirable way for handling trees or plants. While this method of shipment may prove most convenient and desirable for handling budwood or anything of that character, it should never be applied for handling trees. In order to make a safe package the tree must be cut back to a very small size and doubtless be more or less bruised before it reaches destination.

APPLICATION OF PRICES A long list of many varieties is an expensive bill of trees to pack. Many acres of ground must be covered by several men to get them together, and to orders of this kind the retail prices will be strictly applied. Ten trees of three or more varieties will take single tree rates. If you order five trees of one variety, apply per 10 rates. An order for 50 trees of one variety will take the 100 rate, but if you order 50 trees to consist of 5 or more varieties, then apply the per 10 rates. Any number of trees from 50 to 499 will take the 100 rates, while orders calling for any greater number may be figured at the 1000, or wholesale, rates. Complying with the above, several people may club together and obtain the wholesale rates on their trees.

SELECTION OF STOCK If no stock is specified in your order, we will send that which we think is best suited to your soil and to the variety that you order. Our long experience along this line enables us to choose suitable stocks for all soils and for all varieties intelligently, and we will endeavor to suit you in both. Tell us whether your land is light or heavy, if high or low, and if hammock, flatwoods, pine or scrub, and where located.

ORDER EARLY We begin to book orders as soon as our shipping season is over, for trees to be delivered the next planting season, and often our best stock of some of the leading varieties is sold before shipping season opens and those who wait are disappointed. Order early and secure exactly what you want in both variety and stock. This can be accomplished by contracting for trees.

OCKLAWAH NURSERIES

CONTRACTING FOR TREES This is the sensible way to buy trees. Purchases to be satisfactory should always be made in the spring for trees that you expect to plant the coming fall or winter. You will always be sure to get one-year or two-year buds and have them ready when you are ready to plant. Such orders should be placed by the first of May, in order to give us ample time to properly develop the trees.

Purchases of this kind are made by means of a contract entered into between ourselves and our customers, which contract specifies that on or before December 15th of any year we agree to deliver f. o. b. our shipping point any number and any grade of trees that a customer may want, budded on any root stock that he may specify. The first payment under such a contract is 20% of the purchase price. The full payment falls due December 15th, invariably. The trees remain in our nurseries at our risk until this date. If they should be frozen in the nurseries on or after December 15th, it is expressly understood that they are the customer's property and not ours. Customers should protect themselves in this case, and especially when located in a more southern location or a safe location from frost injury, by planting their trees before the 15th of December. If left in our nursery the trees will be banked up well above the point budded and every care exercised to protect them against cold weather, at no additional cost to the purchaser, but at absolutely the customer's risk of loss or injury, for which we refuse to be responsible. If the trees should become injured we will hold them in the nursery and do any work necessary to put them in proper condition for planting at cost, the sum of which shall be specified according to the size and age of the trees, by later agreement between ourselves and the customer.

GRADING AND INSPECTION At time of shipment all trees will be properly dug, and before packing inspected by a state inspector, and when, in our opinion, a tree has an insufficient root system, it will be thrown out, and our customers furnished a tree that is first-class in every respect. The fact that a state inspector, working under the direction of the State Plant Board, is present in our packing house at the time all shipments are made, and inspects one by one every tree before it goes into the packing case, is a warranty sufficient to all exigencies that none but healthy trees, free of insect pests, will be included in any shipment to our customers.

AGENTS Do not place orders with any one purporting to be our agent unless he can show you proper credentials from us.

The agents who handle our business have been chosen with a view to supplying our customers the best service possible to obtain in the various localities in which they represent us. These gentlemen are well informed in a local, as well as in a general, way, on all subjects pertaining to citrus fruit culture and can give to our customers the benefit of the very best of advice relating to their grove planting, when such advice is required, and if you are not in touch with our agent an application to this office is easily made and desired information furnished.

By all means, get in touch with our agents wherever possible to do so, and get the benefit of their help in building your grove. Our agents may always be depended upon to come to you with proper credentials, which you should demand before placing business in their hands, and all properly accredited agents are authorized to transact business for us.

Address all communications and make all remittances to

OCKLAWAH NURSERIES,

Owned and operated exclusively by O. W. Conner.

Lake Gem, Fla.

OCKLAWAHNA NURSERIES

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We are always willing and glad to answer any questions on horticultural matters that you may desire to know, but before writing us make it a point to read Catalog and Bulletin on Budwood Selection very carefully in order to ascertain if your questions are not already answered therein.

Do You Want a Really Good Grove?

Where to Locate

Then buy your land and develop it in the famous Lake Region of Lake County, where conditions are ideal for this purpose—where danger of cold injury is reduced to the minimum by elevation and water protection; where the soil is deep, and underlaid with clay; yet well supplied with moisture; where the best hard road system in Florida is already completed, and where inviting social advantages are afforded.

Expert Supervision

Our lands are located near The Ocklawaha Nurseries and our special arrangements with that firm provide our purchasers, free of cost, their supervision of young groves, until the grove begins to bear. We are in Highland Citrus Sub-Exchange territory. Good prices assured for your fruit if produced on our lands.

Economy in Development

Our Co-operative Bureau, working under the above supervision, clears, and prepares your land, plants your trees and in every way gives to our customers up-to-date service at lowest cost. Nearly forty thousand young trees already planted and under our care, for purchasers of Lake Highlands land.

Services of Our Club House

The Lake Highlands Club House, at Clermont Heights, Lake County, Florida, is always open to entertain our customers. We want you to inspect our lands before you buy elsewhere and meet representatives of Ocklawaha Nurseries who will aid you in making suitable selections of land for your grove. Give us notice of your visit in advance and full arrangements will be made.

Send for Literature

Literature, descriptive of our lands, their location, prices and terms of payment, will be mailed by request. Also booklet, "Clermont Heights"—The Home Beautiful Place of all Florida.

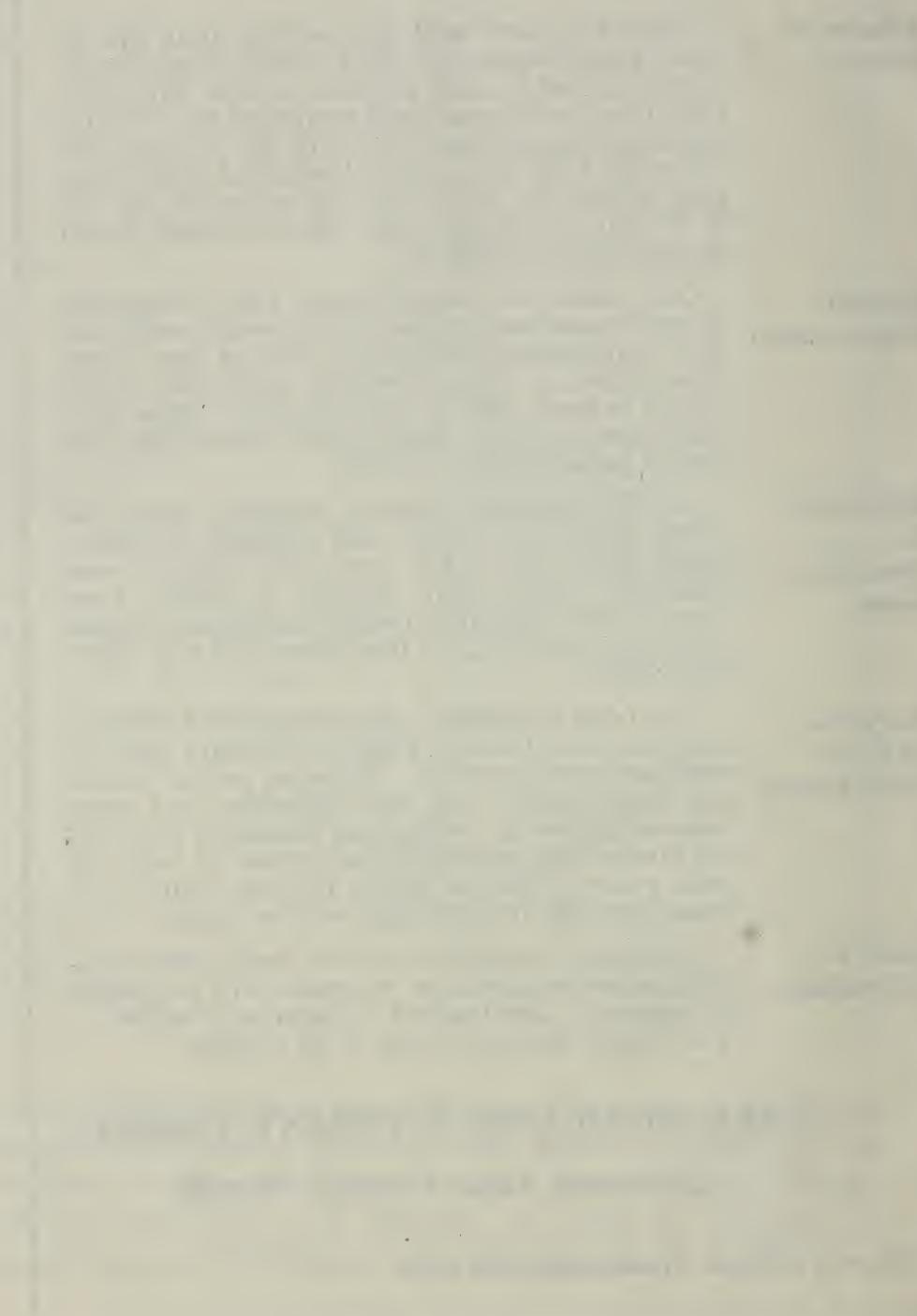
LAKE HIGHLANDS COMPANY, Owners

Clermont, Lake County, Florida

General Offices: Huntington, W. Va.

2 June 1977 (cont'd)

Monsoon band (1100M)



ORDER SHEET

Before MAKING OUT YOUR ORDER, read carefully remarks under "Terms and Methods of Business." Our customers will oblige us by using this sheet in ordering. Extra order sheets furnished on application.

Remittances can be made by Bank Draft, Money Order, Prepaid Express, or Registered Letter.

Please write in the quantity, full name of variety, size and price. Any necessary correspondence should be written on a separate sheet.

We substitute, unless instructed to the contrary, but never until the varieties or sizes ordered are exhausted; and in all cases cheerfully refund the money instead of substituting, if so requested.

Do you wish us to substitute to the best of our judgment in case any varieties or sizes ordered should be exhausted? Write "YES" or "NO."

Ocklawaha Nurseries

Lake Gem, Florida

For amount enclosed, \$_____, send me by _____, the Trees and Plants designated below:
Write here "Freight," "Express," "Mail," or "Use your discretion."

(3) This space for full shipping directions, without reference to P. O. address of purchaser.

~~This space for name and P. O. address of purchaser, without reference to destination of shipment. Ladies please give title, Miss or Mrs.~~

INL Name _____

Name _____

PL Place (Express or)

Street and No. /

County _____ **State** _____

Post Office

Via

VARIETY **STOCK** **AGE**

PRICE **TOTAL**



Descriptive Catalog and Price List



The Book of Truth for Planters of New Groves

